

IN THE SUPREME COURT OF THE DISTRICT OF  
COLUMBIA

The Volta Graphophone Company of)	In Equity
Alexandria, Va., and the American)	No.
Graphophone Co.	14,533
versus	
The Columbia Phonograph Co.	

RECORD, 1893-1894

nb  
Pratt  
of Tanta  
Testing

In The  
Supreme Court of the District of Columbia

Volta Graphophone Co. )  
versus ) No. 14,533.  
Columbia Phonograph Co.)

COPY

from

THE NATIONAL ARCHIVES

Record Group No. 21

Supreme Court of the District  
of Columbia

Equity No. 14533



14533.

Volta Graphophone Co, et al

vs

The Columbia Phonograph Co,  
et al

In Equity No.

Bill of Complaint

(11)

FILED

FEB 14 1893

By [Signature]

Robert M. [Name]

620 F. St.

Complainant's Solicitors.



FILED

FEB 14 1893

*7. 1. 1893*  
IN THE SUPREME COURT OF THE DISTRICT OF COLUMBIA.

*The 14<sup>th</sup> day of February, 1893.*

The Volta Graphophone Company, of )  
Alexandria, Virginia, and the )  
American Graphophone Company, com- )  
plainants, )

vs,

The Columbia Phonograph Company )  
and Edward D. Easton, individually )  
and as President of said Company, )  
defendants. )  
-----)

In Equity.

*14533*  
*Dec. 35*

--:BILL OF COMPLAINT:--

To the Judges of the Supreme Court of the  
District of Columbia,  
-----

The Volta Graphophone Company, of Alexandria,  
*a corporation*  
Virginia, duly organized under the laws of the State of  
Virginia, and having an office for the transaction of business  
in Washington, in the District of Columbia, and the American  
Graphophone Company, a corporation duly organized under the  
laws of the State of West Virginia, and having an office for  
the transaction of business in Washington aforesaid, bring  
this their bill of complaint against The Columbia Phonograph  
Company, a corporation organized under the laws of the State  
of West Virginia, and having its principal office in Washing-  
ton aforesaid, and Edward D. Easton, individually and as  
President of said Company, said Easton being a resident of  
Washington, aforesaid.

I. And thereupon your orators complain and say that Chichester A. Bell and Sumner Tainter, then of Washington aforesaid, were the original, first and joint inventors of certain new and useful improvements in Recording and Reproducing Speech and other Sounds, which were not known or used in this country, or patented or described in this or any foreign country prior to their invention thereof, and which had not been in public use or on sale in the United States for more than two years prior to their application for Letters-patent therefor.

II. That on the 27th day of June 1885, the said Chichester A. Bell and Sumner Tainter made application in due form of law, to the Commissioner of Patents, for the grant of Letters-patent of the United States for the said invention, and then and there fully complied in all respects with the provisions and requirements of the laws of the United States in such case made and provided.

III. That, due proceedings being had upon said application, upon the 4th day of May, 1886, Letters-patent of the United States, in due form of law, were issued and delivered to said Chichester A. Bell and Sumner Tainter, in the name of the United States, under the seal of the Patent Office, and signed and countersigned respectively by the proper officers of the United States, and numbered 341,214, granting to said Chichester A. Bell and Sumner Tainter, their heirs and assigns, for the term of seventeen years from said 4th day of May 1886, the full and exclusive right to make, use and vend said invention throughout the United States and the Territories thereof, as by reference to said Letters-patent, or a duly authenticated copy thereof, here in Court to be produc-



ed, will more fully and at large appear.

IV. That the said Sumner Tainter, was further the original, first and sole inventor of a certain new and useful Improvement in Apparatus for Recording and Reproducing Sounds or Sonorous Vibrations, not known or used in this country or patented or described in any printed publication in this or any foreign country prior to his invention thereof, and not in public use or on sale in the United States for more than two years prior to his application for Letters-patent therefor;

V. That on the 4th day of December 1885, said Sumner Tainter made application in due form of law to the Commissioner of Patents, for the grant of Letters-patent of the United States for the said invention, and then and there fully complied in all respects with the requirements and provisions of the laws of the United States in such case made and provided.

VI. That due proceedings upon said application being had, upon the 4th day of May 1886, Letters-patent of the United States, in due form of law were issued and delivered to said Sumner Tainter in the name of the United States under the seal of the Patent Office, signed and countersigned respectively by the proper officers of the United States, and numbered 341,288, granting to said Sumner Tainter, his heirs or assigns for the term of seventeen years from said 4th day of May 1886, the full and exclusive right to make, use and vend the said invention throughout the United States and the Territories thereof, as by reference to said Letters-patent or <sup>a</sup>duly authenticated copy thereof, here in Court to be produced, will more fully and at large appear.



VII. That the invention or improvements described and claimed in said patent ~~of~~ of Sumner Tainter, were designed for and are capable of use conjointly, and are used conjointly with the improvements or inventions described and claimed in the patent aforesaid of Bell and Tainter in recording and reproducing sounds.

VIII. And your orators further show that on the 29th day of March 1887, said Chichester A. Bell and Sumner Tainter by an instrument in writing duly signed, delivered and recorded in the United States Patent Office the 22 day of September 1887, did give, grant, assign, and convey to your orator, The Volta Graphophone Co., its successors and assigns, the entire right, title and interest in and to the said Letters-patent, No. 341,214, granted to them as aforesaid, and in and to the invention secured thereby, as by reference to said instrument or to a duly authenticated copy thereof here in Court to be produced, will more fully and at large appear.

IX. That on the 29th day of March 1887, said Sumner Tainter, by an instrument in writing duly signed and delivered and recorded in the United States Patent Office the 5th day of April 1887, did give, grant, assign and convey to your orator, The Volta Graphophone Company, its successors and assigns, the entire right, title and interest in and to said Letters-patent No. 341,288, granted to him as aforesaid, and in and to the invention secured thereby, as by reference to said instrument, or a duly authenticated copy thereof, here in Court to be produced will more fully and at large appear.

X. And your orators further show that on the 29th day of June 1887, the said The Volta Graphophone Company, by an



instrument in writing duly signed, and delivered, did grant to the said The American Graphophone Company, the exclusive right and license under the Letters-patent aforesaid, and each of them to make, use and vend Apparatus for Recording and Reproducing Speech and Other Sounds, as by reference to said instrument, or a duly authenticated copy thereof, here in Court to be produced will more fully and at large appear.

XI. That your Orator, The Volta Graphophone Company, has been since the date of the assignment aforesaid and is now the owner of the said Letters-patent, and each of them, and of the rights and privileges secured thereby, and have been and are, save for the doings of these defendants and others acting in concert with them, in the exclusive possession of said rights and privileges; and that your Orator, The American Graphophone Company, has been since the date of the license aforesaid, and still is, entitled to the exclusive use of the said inventions and improvements within the limits aforesaid.

XII. And your Orators further show that the said inventions and improvements are of great commercial value and practical utility; that a great public interest has been manifested therein, and a large demand created for apparatus constructed in accordance with, or embodying the same; that in order to supply this demand and to confer upon the public the advantages and benefits of the said inventions, your Orators have invested large capital in acquiring said patents, and in adapting and perfecting such apparatus, and have at great expense devised and constructed machinery, tools, appliances and other accessories necessary or useful in the manufacture of such apparatus, and have employed numerous skilled



workmen, inventors and mechanics in connection therewith; and that such investment has been made and such expense incurred upon the faith reposed in the said Letters-patent granted by the Government of the United States as aforesaid, and in the rights and privileges secured to them thereby.

6. — XIII. And your Orators ~~farther~~ show, upon information and belief, that these defendants, and others acting in concert with them, since the grant of said Letters-patent and each of them, and since the date of the assignment and license aforesaid, within the said District of Columbia and elsewhere in the United States, wrongfully, unlawfully, and with intent to injure your orators, and to deprive them of the just profits resulting from making, using and vending said inventions, have without the license or consent of your orators used or caused to be used, and sold or leased or caused to be sold or leased apparatus for recording and reproducing sounds, known as "phonographs" each and all containing or embodying, or operating in accordance with, the said inventions, or improvements, substantially as described and claimed in the said Letters-patent and each of them, and in infringement of the exclusive rights granted to your orators as aforesaid; and that the said defendants have derived and received and are still deriving and receiving great gains and profits from such unlawful use, but to what extent your orators are ignorant, and cannot set forth;

XIV. That each such machine or apparatus so made, used and sold by these defendants contains, embodies, or operates in accordance with the inventions or improvements covered by both the Letters-patent aforesaid, or material and substantial parts thereof.



XV. And your Orators therefore pray as follows: (1) that the defendants may be required by a decree of this Honorable Court, to account for and pay over unto your orators all such gains and profits as have accrued or arisen, or been earned or received by the said defendants, and all such gains and profits as would have accrued to your orators but for the unlawful doings of these defendants, and all damages your orators have sustained thereby; and (2) that the defendants, their associates, attorneys, servants, clerks, agents and workmen, may be perpetually enjoined and restrained, by a writ of injunction issuing out of and under the seal of this Honorable Court, from directly or indirectly making, or causing to be made, using or causing to be used, selling or causing to be sold any machine or apparatus embodying, or constructed or operating in accordance with, the inventions or improvements set forth in the Letters-patent aforesaid, or either of them;

And (3) that your Honors will grant unto your orators a preliminary injunction, issuing out of and under the seal of this Honorable Court, enjoining and restraining the said defendants, their associates, attorneys, servants, clerks, agents and workmen, to the same purpose, tenor, and effect as hereinbefore prayed for, with regard to said perpetual injunction;

And (4) that the defendant be decreed to pay <sup>the</sup> costs of this suit;

And (5) that your orators may have such other and further relief as the equity of the case may require.

To the end, therefore, that the said defendants may, if they can, show why your orators should not have the relief

hereby prayed, and may full, true and direct answer make, but not under oath, answer under oath being expressly waived, according to the best and utmost of their, and each of their, knowledge, information, remembrance, and belief, to the several matters hereinbefore averred and set forth, as fully and particularly as if the same were repeated, paragraph by paragraph, and they were thereto severally and specifically interrogated, may it please your Honors to grant to your orators a writ of subpoena ad respondendum issuing out of, and under the seal of this Honorable Court, directed to said defendants, The Columbia Phonograph Company, and Edward D. Easton commanding them and each of them to appear and make answer to this bill of Complaint; and to perform and abide by such orders and decree herein as to this Court may seem just.

And your orators will ever pray.

Alexander Melville Bell  
President of the Volta Graphophone Co.

Pollok Maure,  
Solicitors for Complainants

Anthony Pollok  
Philip Maure  
of counsel.



District of Columbia)s.s:

On this 14th day of February, 1893, before me personally appeared Alexander Melville Bell, and being duly sworn, did depose and say that he is the President of the Volta Graphophone Company, named as complainant in the foregoing bill of complaint, that he has read the same and knows the contents thereof, and that the same is true of his own knowledge, except as to matters therein stated upon information and belief, and that as to such matters he believes it to be true.

*Alex Melville Bell*

*Sworn to and subscribed before me the  
day and year aforesaid.*

*E. J. White*  
*Notary Public,*  
*District of Columbia.*



IN THE SUPREME COURT  
OF THE DISTRICT OF COLUMBIA.

THE VOLTA GRAPHOPHONE COMPANY of  
Alexandria, Va., and THE AMERICAN  
GRAPHOPHONE COMPANY,

Compl'ts,

-vs.-

In Equity. 14,533,

THE COLUMBIA PHONOGRAPH COMPANY  
and EDWARD D. EASTON, Individually  
and as President of said Company,  
Def'ts.

The Answer of the COLUMBIA PHONOGRAPH COMPANY, a corporation organized under the laws of the State of West Virginia, and doing business in the District of Columbia, ~~and EDWARD D. EASTON, individually, and as President of said Company,~~ to the Bill of Complaint of the VOLTA GRAPHOPHONE COMPANY of Alexandria, Virginia, and the AMERICAN GRAPHOPHONE COMPANY, complainants in the above entitled cause.

I. The ~~defendants~~ <sup>defendant</sup>, now and at all times hereafter, saving and reserving unto ~~themselves~~ <sup>itself</sup> all and all manner of benefit and advantage whatsoever of exceptions which can or may be made or taken to the manifold errors, uncertainties, imperfections and insufficiencies in the said Bill of Complaint contained, for answer thereunto, or unto so much and such parts thereof as ~~this defendant is~~ <sup>defendant is</sup> advised is or are material or necessary for ~~them~~ <sup>it</sup> to make answer unto, answering sayd

FILED

MAY 5 1898



I I .      The defendants, upon information and belief, deny that the said Chichester A. Bell and Sumner Tainter, mentioned in the Bill of Complaint, are or ever were the original, first and joint inventors of certain new and useful Improvements in Recording and Reproducing Speech and other Sounds, fully described in the specification of Letters Patent mentioned in the Bill of Complaint as issued to them; and deny that the said methods and apparatus described in said patent were not known or used in this country (meaning the United States), or patented or described in this or any foreign country prior to their alleged invention thereof, and that the same had not been in public use or on sale in the United States for more than two years prior to their said application for Letters Patent therefor.

I I I .      And these defendants further answering say that ~~they are~~ <sup>it is</sup> informed and believe, and therefore admit, that on the 4th day of May, 1886, Letters Patent of the United States for a certain invention referred to in the Bill of Complaint and numbered 341,214, were, on the application of the said Chichester A. Bell and Sumner Tainter, issued and delivered to them; purporting to be so issued and delivered in the name of the United States of America and under the seal of the Patent Office of the United States, and signed by the Secretary of the Interior and countersigned by the Commissioner of Patents, which said Letters Patent did purport to grant unto the said Chichester A. Bell and Sumner Tainter, their heirs and assigns, for the term of seventeen years, the exclusive right to make, use or vend the said alleged invention throughout the United States and Territories thereof; but



~~these~~ defendants, upon information and belief, deny that said Chichester A. Bell and Sumner Tainter duly made application for said Letters Patent, and deny that said Letters Patent in due form of law were issued and delivered to them as alleged.

I V .      ~~These~~<sup>is</sup> defendants, upon information and belief, deny that the said Sumner Tainter, mentioned in the Bill of Complaint, is or ever was the true, original, first and sole inventor of a certain new and useful Improvement in Apparatus for Recording and Producing Sound or Sonorous Vibrations, described in the specification of Letters Patent mentioned in the Bill of Complaint as having been granted to him, and deny that said method and apparatus was not known or used in this country (meaning the United States), or patented and described in any publication in this or any foreign country prior to his invention thereof, and not in public use or on sale in the United States for more than two years prior to his application for Letters Patent therefor.

V.      And ~~these~~ defendants further answering say<sup>is</sup> that ~~they are~~ informed and believes, and therefore admit, that on the 4th day of May, 1886, Letters Patent of the United States numbered 341,288, for the certain invention referred to in the Bill of Complaint, were, on the application of the said Sumner Tainter, issued and delivered to him, purporting to be so issued and delivered in the name of the United States of America, and under the seal of the Patent Office of the United States, and to be signed by the Secretary of the Interior and countersigned by the Commissioner of Patents, and which said Letters Patent did purport to grant to the said Sumner Tainter,



his heirs and assigns, for the term of seventeen years, the exclusive right to make, use or vend the said invention throughout the United States and the Territories thereof; but ~~these~~ defendants, upon information and belief, deny that said Sumner Tainter duly made application for said Letters Patent, and deny that said Letters Patent in due form of law were issued and delivered to the said Tainter as alleged.

V I . And ~~these~~ defendants, further answering, on information and belief say that ~~they~~ <sup>it</sup> do not know and ~~are~~ <sup>is</sup> not informed, save by the said bill of complaint, whether or not the said patent of Sumner Tainter was designed for or capable of use jointly with the improvements or inventions described and claimed in the patent aforesaid to the said Chichester A. Bell and Sumner Tainter, in recording and reproducing sounds, or whether they are thus jointly used; and therefore deny the same, and leave the complainants to make such proof thereof as they may be advised is material.

V I I . And ~~these~~ defendants further answering, say that ~~they~~ <sup>it</sup> do not know and ~~are~~ <sup>is</sup> not informed, save by the said bill of complaint, whether or not by an instrument in writing dated the 29th day of March, 1887, and recorded in the United States Patent Office the 22nd day of September, 1887, the said Chichester A. Bell and Sumner Tainter did assign or otherwise convey to the complainant, the Volta graphophone Company, its successors and assigns, the whole or any part of the said Letters Patent of the United States numbered 341,214, and therefore deny the same, and leave the complainants to make such proof thereof as they may be advised is material.



V I I I . And these defendants further answering say, that ~~they~~<sup>it</sup> do not know and ~~are~~<sup>is</sup> not informed, save by the said Bill of Complaint, whether or not, by an instrument in writing dated the 29th day of March, 1887 and recorded in the United States Patent Office on the 5th day of April, 1887, the said Sumner Tainter did assign and set over to the Volta Graphophone Company, complainant, the whole or any part of the said Letters Patent numbered 341,288, granted to him as aforesaid, and therefore deny the same, and leave the complainants to make such proof thereof as they may be advised is material.

I X . And these defendants further answering say, that ~~they~~<sup>it</sup> do not know and ~~are~~<sup>is</sup> not informed, save by the said Bill of Complaint, whether or not, by virtue of an instrument in writing dated the 29th day of June, 1887, the said Volta Graphophone Company did grant to the said American Graphophone Company the exclusive right and license under the Letters Patent aforesaid and each of them, to make, use and vend apparatus for recording and producing speech and other sounds, and therefore deny the same, and leave the complainants to make such proof thereof as they may be advised is material.

X . And these defendants further answering, deny that ~~they~~<sup>it</sup> ~~have~~<sup>has</sup> any knowledge or information sufficient to form a belief, as to whether, by virtue of the premises or otherwise, the complainants herein are or ever were the sole and exclusive owners of the said Letters Patent referred to in the complaint, together with the alleged inventions and discoveries described and claimed in the said Letters Patent, and the pretended rights and privileges purporting to be



granted and secured, or intended to be granted and secured, thereby; and therefore deny the same, and leave the complainants to make such proof thereof as they may be advised is material.

X I . And ~~this~~ defendants further answering say<sup>4</sup> that ~~they are~~<sup>W. U.</sup> informed and believe<sup>4</sup> that the description of the alleged inventions as set forth in the specifications annexed to the said Letters Patent are incomplete and ambiguous, and that such specifications do not show the method of making and using the said alleged patented inventions in such full, clear, concise and exact terms as to enable any person skilled in the art or science to which they appertain to make, construct and use the same, and that said Letters Patent are therefore void.

X I I . And ~~this~~ defendants further answering say<sup>4</sup> that ~~they are~~<sup>W. U.</sup> informed and believe<sup>4</sup> that the said Letters Patent mentioned in the bill of complaint herein are void and of no effect in law, for the reason that the patentees, Chichester A. Bell and Sumner Tainter, surreptitiously and unjustly obtained the patents referred to in the complaint for that which was in fact the invention of Thomas A. Edison, who was using reasonable diligence in adapting and perfecting the same.

X I I I . And ~~this~~ defendants further answering say<sup>4</sup> that ~~they are~~<sup>W. U.</sup> informed and believe<sup>4</sup> that it is true that said Letters Patent mentioned in the bill of complaint herein are void and of no effect in law, because that prior to the alleged inventions of said Chichester A. Bell and Sumner



Tainter the following-named persons had knowledge of or used the said inventions and method purporting to be covered by the said Letters Patent, or material and substantial parts thereof, at the following-named places in the United States, to wit, at Menlo Park, New Jersey, and elsewhere, by Thomas A. Edison of Orange, New Jersey, and John F. Ott of the same place, Edward H. Johnson of New York City, New York, and Charles Batchelor of the same place, and John Kruesi of Schenectady, New York, and <sup>at Wichita, Kansas,</sup> George H. Herrington of Wichita, <sup>at many other places</sup> Kansas; and many other persons <sup>^</sup> in the United States, but whose names, residences and places of business are at present unknown to these defendants, but which <sup>^</sup> they pray leave to disclose as soon as <sup>^</sup> they can ascertain the same, and to amend this answer by inserting therein such allegations concerning such other persons as are hereinbefore made concerning those now known to <sup>^</sup> these defendants as aforesaid.

X I V . And <sup>^</sup> these defendants further answering say, that <sup>^</sup> they <sup>^</sup> are informed and believe, that the said Letters Patent mentioned in the bill of complaint herein are void and of no effect in law, because that prior to the alleged inventions of the said Chichester A. Bell and Sumner Tainter referred to in the complaint, the said alleged inventions or substantial and material parts thereof had been described and shown in the following Letters Patent, to wit:

Letters Patent of the United States granted to C. H. Field on Engraving Machine, dated April 28, 1857, No. 17,146.

Letters Patent of the United States granted to O. H. Bogardus for Grade Delineator, dated July 30, 1861, No. 32,959.

Letters Patent of the United States granted to Ralph



S. Mershom for Improvement in Gravers, dated December 24, 1867, No. 72,521.

Letters Patent of the United States granted to James M. Connor for Improvement in Machines for Ornamenting Printers' Rules, dated June 13, 1871, No. 115,934.

Letters Patent of the United States granted to J. C. Guerrant for Engraving Machines, dated October 31, 1876, No. 183,920.

Letters Patent of the United States granted to Robert R. Atchison for Improvement in Engraving and Chasing Machines, dated March 14, 1876, No. 174,715.

Letters Patent of the United States granted to Loring Pickering for Improvement in Copying-Telegraph, dated May 29, 1877, No. 191,464.

Letters Patent of the United States granted to Thomas A. Edison for Improvement in Phonograph or Speaking Machines, dated February 19, 1878, No. 200,521.

Letters Patent of the United States, granted to Thomas A. Edison for Improvement in Speaking Machines, dated March 26, 1878, No. 201,760.

Letters Patent of the United States granted to Thomas A. Edison for Improvement in Automatic Telegraphs, dated March 25, 1879, No. 213,554.

Letters Patent of the United States granted to A. L. Wilford Hall for Improvement in Phonographs, dated September 23, 1879, No. 219,939.

Letters Patent of the United States granted to Thomas L. Luders for Improvement in Shock or Jar Recorders, dated December 2, 1879, No. 222, 292.



Letters Patent of the United States granted to Milton Bradley for Process of Engraving Printing-Surfaces, dated March 16, 1880, No. 225, 457.

Letters Patent of the United States granted to Thomas A. Edison on Phonographs, dated May 18, 1880, No. 227,679.

Letters Patent of the United States granted to William A. Leggo for Automatic Telegraph, dated March 15, 1881, No. 238,929.

Letters Patent of the United States granted to J. Harris Rogers for Automatic Telegraph, dated May 8, 1883, No. 277,349.

Letters Patent of the United States granted to Jan H. M. Waldorp for Apparatus for Recording Speed of Trains on Railway-Bridges, dated June 12, 1883, No. 279,292.

Letters Patent of the United States granted to James Webb Rogers for Automatic telegraph, dated August 21, 1883, No. 283,665.

Letters Patent of the United States granted to Christopher C. Reynolds for Phonograph, dated October 23, 1883, No. 287,166.

Letters Patent of the United States granted to John Absterdam for Automatic and Fac-simile Telegraph, dated March 18, 1884, No. 295,219.

Letters Patent of the United States granted to Rufus Anderson for Automatic telegraph, dated April 8, 1884, No. 296,376.

Letters Patent of the United States granted to Albert Schmid for Automatic Electric Copying and Engraving Machine, dated May 6, 1884, No. 298,030.



Letters Patent of the United States granted to George M. Guerrant and John C. Guerrant for Engraving-Machine, dated September 16, 1884, No. 305,178.

Letters Patent of the United States to Kenyon, on a Recorder, October 5, 1880, No. 232,978.

Letters Patent of the United States to Babbett, on Cloth-winders, July 21, 1874, No. 153,212.

Letters Patent of the United States to Hillman, on Cloth Measuring Machines, August 10, 1869, No. 93,619.

Letters Patent of the United States, on Telegraph Details, to Nichols, February 6, 1883, No. 271,903.

Letters Patent of the United States, on Telephones, ~~Patents~~ to Lockwood, August 10, 1880, No. 231,065.

Letters Patent of the United States, on Telephonic, Telegraph Magnetic, to Brady, October 31, 1882, No. 266,746.

Letters Patent of the United States on Metallic Turning, Miscellaneous, to Miles, No. 111,859, February 14, 1871.

Letters Patent of Great Britain to Thomas A. Edison, No. 1,644 of 1878, for Recording and Producing Sound.

Also Letters Patent to same party on same subject-matter, of Canada, No. 8,026, October 17, 1877; of Victoria, No. 2,549, August 15, 1878; of Russia, No. 1,161 of 1882; of Italy, No. 422 of 1878; and of Germany, No. 12,631, July 12, 1878.

Letters Patent of Great Britain, granted to Hadden, No. 291 of 1882.

Letters Patent of Great Britain to Thomas A. Edison, No. 2,909 of 1877.

Letters Patent of Germany to Kleist & Co., No.



11,053, dated January 24, 1879.

Letters Patent of Great Britain, No. 324 of 1860 to Briettmayer.

Letters Patent of Great Britain to Greenwood, No. 225 of 1870.

Letters Patent of Great Britain, No. 1,912, 1857; also many other Letters Patent, the dates, numbers and descriptions of which ~~this~~ defendants <sup>is</sup> ~~are~~ at present ignorant of, but beg leave to disclose as soon as <sup>it</sup> ~~they~~ shall ascertain the same, and to amend this answer by inserting the same allegations concerning such other Letters Patent as hereinbefore made concerning those now known to ~~this~~ defendants, as aforesaid.

X V . And ~~this~~ defendants further answering say that ~~they~~ <sup>is</sup> ~~are~~ informed and believe that the said Letters Patent mentioned in the bill of complaint herein are void and of no effect in law, because that prior to the alleged inventions of the said Chichester A. Bell and Sumner Tainter, the said alleged inventions and substantial and material parts thereof had been described in some printed publication, to wit:

X A publication known under the title "Engineering", of 1879, volume 27, under date of June, pages 326 etc., embodying a description of the "Six-penny Phonograph."

Also in the same publication and volume, page 202, March 7, 1879, containing an article by Preece & Stroh with reference to apparatus for systematic examination of the vowel sounds of automatic phonographs.

A publication known as "Comptes Rendus," volume 85,



page 1,082, deposited by Ch. Cros, April 30, 1877, descriptive of phonographs and their operation.

A publication known as the "Scientific American," of date November 17, 1877, page 304, containing an article by E. H. Johnson, descriptive of the Edison phonograph.

Also an article in the same publication of date August 24, 1878, page 118, with reference to phonographs.

A publication entitled "Haslock's Metal Turning Handbook" (London, 1882).

A publication known as the "Telegraphic Journal of London," published in Vol. 7, 1879, containing an article giving an account of experiments by Abbé Carbonel; also an article under date May 1, 1879, relating to phonographs, etc.

A publication known as "La Nature" of May 3, 1879, page 349.

A publication known as "Journal of the Society of Telegraph Engineers," meeting of April 9, 1879, Vol. 8, page 303.

A publication known under the title of "The Telephone, Microphone and Phonograph," by Du Moncel, New York, 1879, Chapter on Phonographs, pages 235 to 261, etc.

A publication known as "Popular Science Review," London, Vol. 2, page 219, 1878.

A publication known as "Popular Science Monthly," New York, Vol. 12, page 756, 1878.

A publication known as "Scribner's Monthly," Vol. 15, page 857, April 1879.

A publication known as "Prescott's Speaking Telephone, Talking Phonograph, etc.," Chap. 10, pages 292 to 308, New York, 1878,



And also many other printed publications of which these defendants have as yet no knowledge, but which when they shall have knowledge of the same they pray to be permitted to insert by amendment in this answer.

X V I . And these defendants further answering say that as they are informed and believe, said alleged inventions and improvements of the said Chichester A. Bell and Sumner Tainter, and substantial and material parts thereof, more particularly described and claimed in the said Letters Patent mentioned in the bill of complaint herein, had been in public use and on sale in the United States for more than two years prior to the application of the said Chichester A. Bell and Sumner Tainter for the said Letters Patent.

X V I I . And these defendants further answering upon information and belief, say that the alleged inventions and improvements described and claimed in the said Letters Patent referred to in the bill of complaint, were not and are not inventions or the proper subjects of Letters Patent of the United States, in view of the state of the art relating thereto, and as shown in part by the Letters Patent and printed publications hereinbefore referred to, and by the public use and knowledge of the persons hereinbefore designated, and that therefore the said Letters Patent are void and of no effect in law.

X V I I I . And these defendants further answering say that in view of the matters hereinbefore set forth, and of the state of the art existing at the date of the alleged inventions of the said Chichester A. Bell and Sumner Tainter, it did not require any invention to make their alleged im-



(12)

provements,, and that the said Letters Patent referred to in the said bill of complaint herein are therefore void.

X I X . And these defendants further answering, No. 341,212 allege that the said Letters Patent referred to in the said bill of complaint herein were irregularly issued and are null and void and of no effect in law, for the reason, among others, that the said Letters Patent contained both a claim for a machine and a claim for a process.

X X . And these defendants further answering, say that the applications, descriptions and claims of the said Letters Patent and each of them referred to in the bill of complaint herein are multifarious, and set forth and embrace several distinct and independent alleged inventions, devices and methods which are distinct and independent inventions, and that the same cannot lawfully be embraced or contained in one and the same Letters Patent, and that the said several inventions could only be lawfully obtained separately from each other by separate Letters Patent respectively, and these defendants aver and will show that by reason of the said multifariousness the said Letters Patent referred to in the bill of complaint here- and each of them in are void and of no effect.

X X I . And these defendants, on further information and belief, say that the descriptions and specifications filed by the said patentees in the Patent Office pertaining to said Letters Patent referred to in the bill of complaint were, with the purpose of deceiving the public, made to contain less than the whole truth relative to said alleged inventions or discoveries or more than is necessary to produce the desired effect intended to be produced by the said alleged inventions and discoveries.

X X I I . And these defendants, further answering on information and belief, deny that the said inventions and



improvements described in the bill of complaint are of great commercial value and practical utility, and that great public interest has been manifested therein and a large demand created for apparatus constructed in accordance therewith or embodying the same; and ~~they have~~ <sup>it has</sup> no information, save by the bill of complaint, as to whether in order to supply the said demand, and to confer upon the public the advantages and benefits of the said invention the complainants have invested large capital in acquiring said patents and in adapting and perfecting said apparatus; or as to whether they have expended large sums of money or any sums of money in devising and constructing machinery, tools and appliances necessary or useful in the manufacture of such apparatus; or as to whether they have employed numerous skilled workmen, inventors and mechanics in connection therewith; and as to whether such investment was made and such expense incurred upon the faith reposed in the said Letters Patent mentioned in the complaint, or the rights and privileges believed to be secured thereby, and therefore deny the same, and leave the complainants to make such proof thereof as they may be advised is material.

XXIII. And ~~these~~ defendants further answering, deny ~~that they or either of them, or others acting in~~ concert with ~~them~~, since the granting of the said Letters Patent and each of them since the date of the assignment and license aforesaid within the said District of Columbia and elsewhere in the United States, ever or at any time wrongfully or unlawfully, or with the intent of injuring the complainants, or to deprive them of the just benefits resulting from making, using and vending said alleged inventions, have, with-



out the license or consent of the complainants, used or caused to be used, and sold ~~and~~ leased or caused to be sold ~~and~~ leased, apparatus for recording and reproducing sounds, known as "phonographs", each and all containing or embodying or operating in accordance with the said alleged inventions or improvements, substantially as described and claimed in said Letters Patent and each of them; and deny that <sup>it</sup> ~~they~~ have to any extent infringed the alleged exclusive rights granted to the complainants, as aforesaid; and deny that <sup>it</sup> ~~they~~ <sup>has</sup> have derived or received any gains or profits from such alleged use.

XXIV. And the ~~defendants~~ further answering, allege, and say, that the complainants are estopped from enforcing any right of action against these defendants under the patents here in suit, by reason of the state of facts and agreements existing between the parties and their privies.

WHEREFORE, and for the causes aforesaid, ~~this~~ ~~defendants~~ wholly deny the equity of the complainants' bill of complaint herein and all and all manner of wrongful and unlawful acts wherewith in the said bill of complaint ~~they~~ <sup>it is</sup> are charged; and further deny the right of the complainants to the relief and each and every part thereof alleged against the ~~defendants~~ in the said bill of complaint, and submit that <sup>it</sup> ~~they~~ should not be compelled to make any further or fuller answer than that herein contained.

Without admitting that any other matter, cause or thing in the said bill of complaint contained material or necessary for ~~this~~ ~~defendants~~ to make answer unto, and not herein and hereby well and sufficiently answered, confessed, traversed, voided or denied, is true to the knowledge or be-



lief of ~~this~~<sup>these</sup> defendants, all of which matters and things  
~~this~~<sup>these</sup> defendants ~~are~~<sup>be</sup> ready and willing to aver, maintain  
 and prove as this honorable court shall direct, and ~~this~~<sup>these</sup> de-  
 fendants pray the same benefits from this answer as if they  
 had demurred to the said bill of complaint where a demurrer  
 would have been proper, and pleaded to the said bill where a  
 plea would have been proper, and humbly pray to be hence dis-  
 missed, with ~~their~~<sup>in</sup> reasonable costs and charges in this be-  
 half most wrongfully sustained.

IN WITNESS WHEREOF the Columbia Phonograph Company,  
 defendant, has caused its corporate seal to be affixed here-  
 to, and attested by its ~~President~~<sup>Secretary</sup>, ~~and the defendant, Edward~~  
~~D. Easton has herunto signed his name this~~ day of

1893.

this

4th

day of May

COLUMBIA PHONOGRAPH CO.

BY

*[Signature]*  
*[Signature]*

ad. 1893 -

Solicitors and of Counsel for Defendants.

36 Wall St., N. Y. City.



UNITED STATES OF AMERICA.

:  
:ss.  
:

EDWARD D. EASTON, being duly sworn, deposes and says that he is President of the Columbia Phonograph Company, defendant in the above-entitled cause, and as such makes this verification, and also as defendant individually; that he has read the foregoing answer and knows the contents thereof to be true of his own knowledge, except as to those matters therein stated to be alleged on information and belief, and as to those matters he believes it to be true.

Sworn to before me this :  
:  
day of 1893.:



S. C. D. C.

Volta Graphophone Co., etal

v.

Columbia Phonograph Co., etal

} Equity  
No. 14533

The CLK will pl enter dismissal  
of the bill as to F. D. Easton, individ-  
ually & as President.

Pollak & Mauro  
Compt's Solicitors

Bill dismissed as to F. D. Easton,  
personally and as President as  
directed.

May 2/93

By the Clerk



To Mr. Tainter with  
Complaint of  
T. C. Tainter

Oct 6, 1894

IN THE

Supreme Court of the District of Columbia

VOLTA GRAPHOPHONE Co. }  
vs. } No. 14,533.  
COLUMBIA PHONOGRAPH Co. }

MESSRS. MACKALL & MAEDEL,  
*Solicitors for Defendants.*

GENTLEMEN: Please to take notice that testimony on behalf of the complainants in the above-entitled cause will be taken at our office, No. 620 F street, in this city, on Tuesday, January 16, 1894, before E. L. White, a standing examiner of this court, the testimony to begin at 10.30 o'clock in the forenoon.

We shall examine Chas. S. Tainter, of this city, and possibly others.

Respectfully,

POLLOK & MAURO,  
*Solicitors for Complainants.*

Service of copy of above notice acknowledged this  
13th day of January, 1894.

MACKALL & MAEDEL,  
*Of Counsel for Complainant.*



IN THE SUPREME COURT OF THE DISTRICT  
OF COLUMBIA.

VOLTA GRAPHOPHONE COMPANY <i>et al.</i> , Complainants, <i>vs.</i> COLUMBIA PHONOGRAPH COMPANY, Defendant.	}	Equity, No. 14,533.
--	---	---------------------

Be it remembered, that under and in pursuance of the notice hereto annexed, and given in the above-entitled cause, personally appeared before me, the undersigned, an examiner in chancery of this honorable court, on Tuesday, the 16th day of January, A. D. 1894, at 10.30 o'clock in the forenoon, at the law offices of Pollok & Mauro, Esquires, No. 620 F street northwest, in the city of Washington, District of Columbia;

Pollok & Mauro, Esquires, solicitors for the complainants herein, and

Samuel Owen Edmonds, Esquire, solicitor for the defendant herein.

Counsel for complainants introduce in evidence a certified copy of letters patent of the United States, No. 341,214, granted May 4, 1886, to Chichester A. Bell and Sumner Tainter, for "improvements in recording and reproducing speech and other sounds," and the same is marked Complainants' Exhibit Bell and Tainter Patent.—E. L. White, examiner in chancery.

Counsel for complainants also introduce in evidence a certified copy of letters patent of the U. S., No. 341,288, granted May 7, 1886, to Sumner Tainter, for "improvement in apparatus for recording and reproducing sounds," and the same is marked Complainants' Exhibit Tainter Patent.—E. L. White, examiner in chancery.



Counsel for complainants also introduce in evidence certified copies of the following assignments:

From C. A. Bell and Sumner Tainter, dated March 29, 1887, to the Volta Graphophone Company, the same being marked Complainants' Exhibit Assignment No. 1.—E. L. White, examiner in chancery.

From Sumner Tainter, dated March 29, 1889, to the Volta Graphophone Company, the same being marked Complainants' Exhibit Assignment No. 2.—E. L. White, examiner in chancery.

Counsel for complainants also introduce in evidence certified copy of license agreement between the Volta Graphophone Company and the American Graphophone Company, dated June 29, 1887, and the same is marked Complainants' Exhibit License Agreement.—E. L. White, examiner in chancery.

Counsel for complainants also offer in evidence the machine or apparatus bearing the inscription on a plate, "North American Phonograph Company, New York," with numbers and dates of patents, the machine being number 5185, and the same is marked Complainants' Exhibit Modern Phonograph.—E. L. White, examiner in chancery.

Whereupon—

CHARLES SUMNER TAITER, who, being produced as a witness of lawful age, for and on behalf of the complainants herein, and being by me first duly sworn according to law, and cautioned to tell the truth, the whole truth, and nothing but the truth touching the matters at issue in the above-entitled cause, did depose and say as follows, to wit:



By Mr. MAURO:

1 Q. Please state your name, age, residence, and occupation.

A. My name is Charles Sumner Tainter; my age is about forty years; my residence is Washington, D. C., and my occupation is that of an inventor.

2 Q. Please state what occupations you have followed in the past, and what experience, if any, you have had in the construction and use of philosophical instruments?

A. I have been familiar with telegraphic, electrical, and philosophical apparatus generally for a period of more than twenty years, and have designed, made, and used many pieces of apparatus of that nature. About 1871-72 I was employed by Charles Williams, Jr., of Boston, Massachusetts, in the manufacture of telegraphic and electrical instruments, and afterwards for a period of four or five years was with Messrs. Alvan Clark & Sons, at Cambridgeport, Massachusetts, manufacturers of astronomical, mathematical, and electrical apparatus. In 1874 I was commissioned by the United States Government a member of the expedition to observe the transit of Venus, and on that mission visited the observing stations in the Southern Hemisphere, having special care of the instruments and their mounting, etc. About 1878 I was for some time in business for myself as a philosophical instrument maker. Since that time I have specially devoted myself to the study and development of apparatus for transmitting, recording, and reproducing sound.

3. Q. Please state, a little more in detail, what experience, if any, you have had in connection with matters relating to the transmission, recording, and reproducing of sounds?

A. In 1879 I became associated with Prof. A. Graham Bell in the development of accoustical apparatus, and the recording and reproduction of sound received much at-



tention. We considered the art in its infancy and thought that it had a great future of practical utility if developed in the right direction. We realized, however, that its practical development involved protracted labor and research, and also the expenditure of considerable capital. During the years 1879 and 1880 we devoted considerable time to the problem of transmitting sounds to a distance by means of radiant energy, and developed the instrument known as the "photophone." In the spring of 1881 Dr. Chichester A. Bell joined us and we formed what was known as the Volta Laboratory Association, with the object of making inventions and discoveries relating to the transmission, recording, and reproduction of sounds and experimenting with the same for our mutual benefit. We had a well-equipped laboratory at No. 1221 Connecticut Avenue, Washington, D. C. (since removed), and the work was continued with assiduity for a period of several years. During this time a number of valuable inventions and discoveries were worked out and perfected, and some of these are described in the patents Nos. 341,212, 341,213, 341,214, 341,287, 341,288, dated May 4, 1886, which were subsequently assigned to the Volta Graphophone Company.

4 Q. Are you the Sumner Tainter who appears as grantee in those patents?

A. Yes, sir; I am.

5 Q. Please state to what extent, if any, you have made yourself familiar with the developments in, and progress of, the art of recording and reproducing sounds?

A. I kept generally posted in regard to publications on this subject, but prior to the year 1877 very little seems to have been accomplished in the way of recording and reproducing sounds. In the year 1857, one Leon Scott devised what he termed a phonautograph, which consisted of a recording cylinder, coated with a film of lampblack, revolved spirally against a stylus, the latter being carried



and also actuated by a diaphragm against which the operator spoke or sung. The vibrations imparted to the diaphragm, which was arranged at right angles to the cylinders, being communicated to the stylus caused a wavy line to be traced by the latter in the film of lampblack, the undulations of this line being similar in shape to the sound vibrations. Scott thus produced a graphic record of sound, but devised no means of reproducing the sound so recorded. The invention of the speaking telephone demonstrated that sounds of every sort could be reproduced by causing a diaphragm to vibrate in correspondence with atmospheric vibrations characteristic of such sounds; in other words, by causing it to copy the motions of the diaphragm when spoken to or thrown into action by any sound-producing agency. In the receiving telephone the diaphragm was caused to copy the motions of the transmitting diaphragm by electrical agency. It only remained, therefore, to devise a mechanical expedient for communicating the motion of the recording diaphragm of a Scott phonautograph to a diaphragm similar to that of a receiving telephone.

6 Q. Please describe the practical developments in this art, prior to the grant of the patents in suit?

A. In the year 1877, Mr. Edison invented an instrument known as the phonograph, in which the sound record or undulatory line on a cylinder, produced in accordance with Scott's invention, was utilized as a groove or cam to guide a stylus attached to a diaphragm which was thereby vibrated in accordance with the irregularity in the bottom of the groove. The close relationship existing between the telephone and the phonograph is fully recognized by those conversant with the subject. The instrument constructed by Mr. Edison was crude, but it served to demonstrate that it was possible to reproduce sounds of every kind mechanically.

7 Q. State whether or not you are familiar with the



construction and operation of the phonograph referred to in your last answer; and if so, please, describe the same and state the results that were obtained with it?

A. I have used such an instrument many times, and am therefore familiar with its construction. It operated in the following manner: The grooved sound record was produced by moving a very soft and pliable material, such as metal foil, against the point of the recording stylus while speaking or making a noise in front of the diaphragm to which it was attached, so that the point of such stylus indented a line having alternate depressions and elevations in such soft and pliable strip. In actual performance the apparatus was very unsatisfactory. The sounds reproduced were metallic in quality and indistinct, and bore but a faint resemblance to the originals. They were at best distorted and caricatured, and recognizable speech could not be obtained. The instrument served only as a toy for amusement, being incapable of practical use. Mr. Edison labored on this device for several years, his last United States patent prior to those mentioned above being granted in May, 1880.

8 Q. Please state, if you know, the practical reasons for the imperfect or unsatisfactory results obtained with the phonograph of 1877?

A. In trying to improve upon the results obtained from Mr. Edison's instrument, I began my work by studying the causes of failure in the phonograph, and soon learned that its construction was not adapted to produce, in the metal foil, an exact record of the sound vibrations, since, owing to the pliability of the material, the action of the stylus while forming the record had a tendency to bend the foil some distance away from, and all around, the point of contact, and this action distorts that part of the record immediately back of the recording point. Furthermore, it was evident that an instrument that acted by forming a record in a pliable strip could



never become practically successful since the record was essentially perishable, the utmost care being necessary in handling it to prevent injury. Every attempt at reproduction tended to smooth out and obliterate the sound record. Another serious defect in the Edison machine was its lack of recording capacity, as only a few words could be contained on quite a large area of foil. This necessitated frequent changes of the foil, which consumed much time and required considerable skill in properly adjusting the foil to the cylinder. It became evident, therefore, that the method of indenting a pliable strip, whether of tin-foil or of paper saturated with wax, or similar composition, involved elements of failure that could not be eliminated, and it seemed useless, therefore, to attempt improving the phonograph, and that an entirely different method of recording must be discovered.

9 Q. Please describe the principal characteristic features of the method and apparatus described in patent No. 341,214, Complainants' Exhibit Bell and Tainter Patent, and answer the same question with reference to patent No. 341,288, Complainants' Exhibit Tainter Patent?

A. The following seem to me to be some of the principal characteristic features described in patent No. 341,214, Complainants' Exhibit Bell and Tainter Patent: *First.* The formation in solid substances of elevations and depressions, or other irregularities, corresponding more or less perfectly to the shapes of sound vibrations by means of a cutting, gouging, or graving action of a sharp-pointed stylus actuated by the sound waves or sonorous vibrations which it is desired to record. *Second.* A sharp-pointed stylus arranged so that it can be vibrated by the action of sound waves and adapted to cut, gouge, or grave a line in a solid body. *Third.* A record of sound vibrations in the shape of a groove formed in a solid body by a cutting, gouging, or graving action, in which the material of said body has been removed in the form

of a chip  
in the f  
a guide  
mounted  
*Sixth.* T  
ing the  
having a  
ing surf  
a uniform  
producin  
upon the  
acteristic  
Exhibit T  
a hollow  
face for  
journalled  
at one or  
of the tab  
volved at  
between s  
gravity for  
and repro  
free latera  
other devic

10 Q. Pl  
and experim  
ments set f

A. In de  
patents the  
extended th  
for a mean  
defects that  
or embossi  
which is us  
the present  
that occur



of a chip or shaving. *Fourth.* A record in a solid body in the form of a groove with sloping walls which act as a guide to the reproducer. *Fifth.* A reproducer, loosely mounted so as to be readily guided by the record groove. *Sixth.* The use of wax, or waxy compositions, for receiving the engraved record. *Seventh.* A sound recorder having a cutting style which is held against the recording surface by an elastic or yielding pressure to secure a uniform depth of cut. *Eighth.* The use of gravity in producing uniform pressure of recorder and reproducer upon the tablet. The following are the principal characteristic features of patent No. 341,288, Complainants' Exhibit Tainter Patent: *First.* A record tablet formed of a hollow cylinder or tube having a wax or waxy-like surface for receiving the record. *Second.* A tablet-holder journaled so as to prevent end motion, and detachable at one or both ends to permit the placing and removal of the tablet. *Third.* A feed-screw of coarse pitch, revolved at less speed than the tablet-holder, and gearing between said screw and tablet-holder. *Fourth.* Use of gravity for producing uniform pressure upon the recorder and reproducing surface. *Fifth.* Reproduce style having free lateral movement independent of diaphragm or other device, upon which it impresses the vibration.

10 Q. Please give an idea of the range of your studies and experiments in the course of developing the improvements set forth in these patents?

A. In developing the inventions described in these patents the experiments took a wide range, and the work extended through a number of years. In looking about for a means of recording which would be free from the defects that seemed to be inseparable from the indenting or embossing process, the gouging or graving method, which is used exclusively in the successful machines of the present time, was, among many others, one of the first that occurred to me. In developing this process, the diffi-



culties that presented themselves were many and serious. Experiments had first to be made to discover what material was best suited to the purposes, and then to determine by what method a sound record could be accurately and with the required ease and rapidity produced therein. The study and examinations of different substances for a recording medium took a wide range and occupied many months. A great many forms of cutting styles were made and tested in the efforts to arrive at the best shapes for the purposes, and many experiments were made to determine the best form for the complete apparatus. From experience had with the pliable strip, it was determined that the records, to be permanent, must be produced in a solid resisting material. It was also thought desirable to obtain the record in such a form that it could be used as a die, or mould, from which duplicates could be obtained. A great many experiments were carried on in this field. By the method of graving, or cutting out a record in a solid waxy composition, the difficulties and defects inherent in the plan of indenting or embossing a pliable strip were completely overcome. Articulate speech was reproduced distinctly, accurately, and with a purity of enunciation, and the record formed in the stiff tablet could be handled and transported through the mails without damage, and could be used in reproduction many times. I made it my individual work to elaborate a machine embodying the principles set forth in the patent 341,288, which was granted to me May 4, 1886. I found that a tablet, cylindrical in shape, possessed important advantages over the flat, or disk-shaped form, and I developed a cheap and easily-made tablet by coating a paper tube with a composition of beeswax and paraffine. This tablet is self-supporting; it has no tendency to lose its shape by warping or otherwise, and in use is convenient and efficient. The recorder for operating in connection with it was provided with a cutting style,



and was arranged to be fed forward, slowly, while the cylindrical tablet was rotated, thus creating a spiral line on the surface. The recorder was arranged to rest by its own weight on the tablet, and thus its action was not detrimentally affected by irregularities in the surface thereof. Several machines were constructed as described in this patent, and operated with excellent results. A description of it is published in *Harper's Weekly* of July 17, 1886. Its performance satisfied us that a machine, capable of industrial use, was obtained, and we began then to consider plans for introducing it to the public.

11 Q. Can you produce a copy of the *Harper's Weekly* referred to in your last answer; if so, please produce it?

A. I can, and I do.

The witness hands to counsel a copy of the paper referred to and the same is offered in evidence by counsel for the complainants and marked Complainants' Exhibit, *Harper's Weekly* of July 17, 1886.—E. L. White, examiner in chancery.

12 Q. Are you familiar with the construction and operation of phonographs such as represented by Complainants' Exhibit Modern Phonograph?

A. I am.

13 Q. Please state whether or not such apparatus, in its construction and operation, contains or employs the subject-matter of any of the claims of letters patent No. 341,214, Complainants' Exhibit Bell and Tainter Patent; and, if your answer be yes, please point out which claims are, in your opinion, so employed or contained in said apparatus?

A. I think it does. I find the subject-matter of the following claims of this patent in the Complainants' Exhibit Modern Phonograph, namely: Claims 1, 3, 4, 5, 6, 7, 8, 9, 10, 15, 16, 17, 18, 24, 27, 30, 31, and 32.



14 Q. Please answer the same question with reference to letters patent No. 341,288, Complainants' Exhibit Tainter Patent?

A. I find the subject-matter of the following claims of this patent in the Complainants' Exhibit Modern Phonograph, namely: Claims 1, 4, 5, 6, 7, and 37.

At this point, by consent of counsel, further proceedings herein are adjourned subject to notice and agreement.

E. L. WHITE,  
*Examiner in Chancery.*

CITY OF WASHINGTON,  
DISTRICT OF COLUMBIA,  
*January 22d, 1894.*

Met pursuant to notice and agreement at the offices of Pollok & Mauro, Esquires.

Present, the same parties as before.

Whereupon Mr. Mauro announces that the examination-in-chief of the witness is concluded.

Cross-examination by Mr. EDMONDS:

15 Q. Please describe, more in detail, the phonautograph of Leon Scott, referred to in your fifth answer?

A. The Scott phonautograph, as I remember the published description, was provided with a straw for a stylus, and the mechanism for giving a spiral motion to the cylinder was, I think, a screw in some form. The details of the apparatus I do not remember distinctly, as I never worked with the apparatus, and only remember it from the published description.

16 Q. Of what material was the cylinder to which you have referred?

A. I think it was made of brass; brass or some other metal.

17  
with  
not?  
A.  
18  
as me  
was n  
an op  
sound  
A. I  
would  
but fro  
I do no  
sentati  
length  
false vi  
record  
19 Q.  
device,  
their sm  
from the  
A. I s  
20 Q.  
the lamp  
A. It  
state.  
21 Q.  
minute  
there no  
A. Ve  
22 Q.  
surface  
readily  
A. Th  
cylinder,



17 Q. This cylinder, as I understand, was provided with an externally applied film of lampblack, was it not?

A. I think it was.

18 Q. Do you wish your fifth answer to be construed as meaning that with the exception of the fact that there was no reproducing mechanism, this phonautograph was an operative device for recording speech and other sounds?

A. I think such a device as the Scott phonautograph would make a record similar in shape to the sound waves, but from my experience with apparatus of that nature I do not think that the record would be an exact representation of the sound waves. I think that from the length and arrangement of the stylus that a great many false vibrations would undoubtedly be introduced into a record made by such a device.

19 Q. Was it not also found to be objectionable in this device, that the minute particles of lampblack, owing to their small specific gravity, would, after being scraped from the cylinder, settle upon surrounding objects?

A. I should think they would be liable to do so.

20 Q. What is your understanding as to the nature of the lampblack used upon Scott's cylinder?

A. It was probably carbon in a very finely-divided state.

21 Q. There is very little, if any, cohesion between the minute particles of carbon constituting lampblack, is there not?

A. Very little.

22 Q. So that after having been scraped from the surface of the cylinder they would fall or could be readily brushed from the same; is that so?

A. They would readily fall, I should say, from the cylinder, but it would not do to brush them in any way



from the cylinder, as it would be almost impossible to do this without disturbing the remaining film of lampblack.

23 Q. The straw style to which you have referred was round in cross-section and hollow, was it not?

A. I presume it was, although I do not think the engraving shows this clearly.

24 Q. And the end of the style was arranged obliquely to the cylinder and bore against the same with a yielding pressure; is that so?

A. That is my recollection.

25 Q. Was the style so arranged relatively to the cylinder that its end bore with yielding pressure upon the uppermost surface of said cylinder while the same was rotating?

A. My recollection is that it bore somewhere between the vertical and horizontal planes, or between the top and the side of the cylinder. In the action of such an apparatus, I should say it would be immaterial where the point of contact was.

26 Q. In operation the lampblack, displaced by the style, would fall away from the cylinder, would it not?

A. It would, of course, have a greater tendency to do this if the point of contact is at the end of a horizontal diameter or below that point, than it would if the point was above it; but I should think that more or less particles would adhere to the surface in the case of any arrangement.

27 Q. Why would more or less of the material adhere to the cylinder?

A. The particles of lampblack, while being scraped away at a rapid rate, are thrown away from the point in various directions, and some of them would be very apt to fall upon the lampblack film. The particles also I should think would be affected more or less by electrical action which would have a tendency to attract them towards the cylinder.

28 Q. W

A. I sho  
proximatel  
of uniform  
rounding p

29 Q. Th  
it not?

A. It was  
black varie

30 Q. Dic  
the curve of

A. I pres  
governed so  
but as the  
would, I thi  
it would tak  
the lampbla  
in the line o  
variation of  
produced by  
itself.

31 Q. Wh  
tirely away f  
from one in  
the action o  
another—do

A. There v  
the actions o  
as in one th  
moved, while

32 Q. Ther  
new in the  
operating in  
move from th  
yielding mat

A. It was



28 Q. What was the form of the record in cross-section?

A. I should think that the cross-section would be approximately uniform, provided the film of lampblack is of uniform thickness and the point of the stylus a rounding point.

29 Q. This record was of varying depth, however, was it not?

A. It was not, unless the thickness of the film of lampblack varied.

30 Q. Did not the sides of the record groove curve with the curve of the circular straw?

A. I presume that the side of the record would be governed somewhat by the shape of the point of the stylus, but as the lampblack film was of extreme thinness, it would, I think, be difficult to determine just what shape it would take. The stylus in the phonautograph scraped the lampblack entirely away, leaving the cylinder bare in the line of the record. There could therefore be no variation of depth in such a record except what would be produced by the varying thickness of the lampblack film itself.

31 Q. When you speak of scraping the lampblack entirely away from the cylinder you distinguish this action from one in which the material is merely displaced by the action of the style—that is, pushed to one side or another—do you not?

A. There would, of course, be some difference between the actions of these two methods of making the record, as in one the material would be scraped away and removed, while in the other it would be merely displaced.

32 Q. Then, at the date of your invention it was not new in the art of recording sounds to vibrate a style operating in connection with a cylinder, and thereby remove from the surface of said cylinder a portion of the yielding material deposited thereon?

A. It was not new. In all the previous instruments



the action was to produce the record of uniform depth as in the case of the phonautograph.

33 Q. Do you mean to say that in all devices for recording sound which preceded your invention the grooves were of uniform depth throughout?

A. No, sir; that is not my intention. I referred to devices which scraped or removed the material in a manner similar to that of the phonautograph.

34 Q. Was it new at the time of the invention here in controversy to form a record groove of varying depth in the surface of a cylinder carrying upon its periphery a yielding material?

A. It was not new. Such records had been made by the indenting or embossing process, but so far as my knowledge extends it was new to form such records by means of cutting, graving, or gouging out the material of such record surface.

35 Q. Was it new to make the record grooves in a cylinder of yielding material variable in cross-section?

A. It was not new.

36 Q. Then it was not new prior to the date of the present invention to form a record groove of variable cross-section in a body of yielding material by displacing and removing the material at that point?

A. It was not new to make such a record by displacing material, but so far as my knowledge extends it was new to make a record in which the vibrations consisted of elevations and depressions formed by the cutting, gouging, scraping, or graving action of a sharp-pointed stylus.

37 Q. Do you use the words "cutting, gouging, scraping, or graving" synonymously?

A. Cutting, gouging, and graving, I should say, were synonymous terms, as such operation involves the removal of material in the form of a chip or shaving; but in a scraping action the material may or may not be removed. It is difficult to determine just where the cut-

ting, gouging action applied when frequently the face scraped. The action to characterize as the

38 Q. Do you mean to say that the action here in controversy is gouging, or is it cutting action?

A. I do not know. See Patent 341,214. Patent, open to the public, or graving, or elevations, or entirely removed the form of

39 Q. Was it new to the rotating the style?

A. It was not new.

40 Q. Was it new to have such a cylinder walls?

A. In the extremely thin walls of the walls were formed by indenting the slope more of the stylus

41 Q. Is it new to the machine the effect of the groove when the groove?



ting, gouging, or graving action would end and the scraping action begin. The term, scraping, is very often applied when no material is removed. Then, again, it is frequently used in cases where the material of the surface scraped is more or less taken away or removed. The action of the Scott phonautograph I should characterize as that of a scraping one.

38 Q. Do you understand that the style of the invention here in controversy has two actions—one a cutting, gouging, or graving action, and the other a scraping action?

A. I do not. The action of the style described in patent 341,214, Complainants' Exhibit Bell and Tainter Patent, operated by what I consider a cutting, gouging, or graving action, and made the record in the form of elevations and depressions, of varying cross-section, by entirely removing the material of the record surface in the form of a chip or shaving.

39 Q. Was it new at the time of this invention to move the rotating record cylinder longitudinally relatively to the style?

A. It was not.

40 Q. Was it new to provide the yielding surface of such a cylinder with a record groove having sloping walls?

A. In the case of the phonautograph, the film being so extremely thin, it is difficult to say what the shape of the walls would be. In the method of making records by indenting and embossing the walls would probably slope more or less, depending upon the shape of the point of the stylus.

41 Q. Is it not a fact that a tapering style was used in the machine to which you have just referred, and that the effect of the vibration of this style was to make a groove whose walls sloped toward the bottom of the groove?



A. A tapering style, if used in the indenting or embossing method of forming records, would, I should say, make a groove with sloping walls.

42 Q. Of what did the "solid body," referred to in Complainants' Exhibit Bell and Tainter Patent, consist?

A. One solid body mentioned in said patent as being suitable for this purpose, is that of a waxy or amorphous and slightly cohesive substance, and a compound of beeswax and paraffine is mentioned as fulfilling these conditions. Records were made in this composition without difficulty.

43 Q. How was this solid body arranged so as to be operated upon by the style according to the patent?

A. In the case of one form of apparatus shown in said patent the tablet or material for receiving the record was made by coating paper or pasteboard in the form of a circular disk with the composition of beeswax and paraffine. The record was then cut in this coating. Another form of apparatus, described in this patent, operated by means of a long strip of paper, which was coated with the waxy composition.

44 Q. Then the "solid body" of this patent is either a strip or disk of pasteboard bearing upon its surface a waxy or amorphous and slightly cohesive substance?

A. The patent, I should say, is not limited to these forms of recording surface, but these are simply mentioned as being suitable for the purpose. Any form of recording material can be used which can be readily cut, gouged, or engraved.

45 Q. I call your attention to lines 55 *et seq.*, of the first page of the specification of the patent referred to, which read: "This part of the invention also consists in a "recording material composed of a wax or waxy surface "on a paper or pasteboard foundation." Do you wish to be understood as saying that you may wholly dispense with an essential portion of the construction here de-

scribed,  
construc  
patent?

A. Th  
was mer  
tablets r  
should s

46 Q.  
a hollow  
in your

A. I d  
that que

47 Q.  
vious qu  
of the re  
ent, have

A. A t  
terial, I  
claims of

48 Q.  
such a ta  
any desir

Co



scribed, to wit, the foundation, use the remainder of the construction, to wit, the wax, and still be covered by this patent?

A. The paper or pasteboard foundation mentioned was merely used as a matter of convenience. The use of tablets made entirely of the recording material would, I should say, be covered by the patent.

46 Q. Suppose this material were made in the form of a hollow cylinder, instead of a disk or a strip; would it, in your opinion, be covered by the patent in question?

A. I don't think that I am fully competent to answer that question, not being a patent lawyer.

47 Q. Still you have not hesitated to answer the previous question to the effect that a tablet made entirely of the recording material would be covered by the patent, have you?

A. A tablet composed entirely of the recording material, I should say, would be covered broadly by the claims of said patent.

48 Q. Is it your understanding of those claims that such a tablet may be cylindrical or tubular, or, in fact, any desired shape, and still be included in them?

Counsel for complainants object to further examination in this line on the ground that the patent, as to what it describes, speaks for itself, and as to what it covers is for the court, and not for the witness, to construe. In support of this objection, counsel call the attention of defendant's counsel to the decision of the Supreme Court in *Corning v. Burden*, 15 How., 252, and particularly to the following language of the court: "The refusal of the court to hear the opinion of experts as to the construction of the patent was proper. Experts may be examined as to the meaning of terms of art on



"principle of '*cuique in sua arte credendum*,' but "not as to the construction of written instruments." Notice is further given that as to questions of the nature objected to, defendant's counsel will be considered as making the witness his own.

Defendant's counsel can not see the force of this objection, in view of the fact that the witness, in his direct-examination, testified in a dual capacity to construe the claims so as to cover defendant's construction, and to set forth the difficulties to be overcome and the ends to be obtained by the patented structure. It is certainly competent to interrogate the witness as to what he finds to be included in his own patent.

A. I think the cylindrical or tubular tablet would be covered broadly by the claims of said patent.

49 Q. Would the same answer apply where the tablet was self-sustaining, or where it consisted of a hollow cylinder provided with a wax, or wax-like, coating?

A. It seems to me that patent No. 341,214, Complainants' Exhibit Bell and Tainter Patent, covers broadly any form of tablet wherein the record is produced by a cutting, gouging, or graving action.

50 Q. Do you find anything in the patent referred to which warrants your statement that the use of tablets, made entirely of the recording material, would be covered by the patent?

Same objection.

A. It seems to me that all forms of the tablets in which the record is cut, gouged, or graved, would be covered broadly by the claims of this patent.

51 Q. What claims do you refer to?

A. Claims one, seven, eight, ten, eleven, and twelve.



52 Q. These claims, then, are all that you find in the patent which you conceive to warrant you in construing the invention to cover broadly any tablets of waxy or amorphous material wherein the record is produced?

Same objection as to question 48.

A. I don't know that these claims are all. Possibly there may be others.

53 Q. Do you find anything else in the patent, besides these claims, which warrants you in construing the scope of the invention as stated in the foregoing question?

Same objection.

A. I have not given said patent sufficient study to enable me to say whether there are any other parts of the patent, than the claims to which I have referred, which are pertinent to the matter inquired of.

54 Q. Do you now, after having examined said patent, find anything in said patent, besides the claims which warrant you in construing the invention to cover broadly any tablet of waxy or amorphous and slightly cohesive compound, wherein the record is produced by cutting, gouging, or graving?

Same objection.

A. I do. On page 1, line 9, as follows: "This invention relates to the formation in a solid substance of elevations and depressions or other inequalities corresponding more or less perfectly to the forms of sound vibrations." Then again, line 59, same page: "The invention consists, secondly, in engraving the record in a waxy or amorphous and slightly cohesive substance." Again, on page 6, line 48: "The foregoing details have been given with some minuteness. This has been done to furnish the best information in our power for ena-



"bling those skilled in the art to make and use the invention, and not with the intention of limiting the invention to the precise dimensions, proportions, shapes, and materials stated." It seems to me that it is evident from the wording of the specification that it is not intended to limit the form of tablet to paper or pasteboard coated with the recording composition.

55 Q. What effect, then, do you give to lines 66 *et seq.*, on page 1 of the specification, which state,—“this part of the invention also consists in a recording material composed of wax, a waxy surface on a paper or pasteboard foundation,”—in view of the fact that this is the only construction of recording tablet which you have illustrated in the drawings of said patent?

Same objection.

A. This construction was used in the drawings for the reason that we considered it the best form at that time. I have made records many times prior to the date of the issue of this patent on cylinders composed entirely of the recording material. We considered the paper foundation, or the use of the paper foundation, a superior arrangement.

56 Q. Was it, then, wholly immaterial whether in the machines shown and described in this patent you used the recording material composed of wax on paper, or a material composed entirely of wax?

A. It is entirely immaterial. The record could just as well be made in a tablet formed entirely of the recording composition as in one formed by placing a coating of the composition upon a paper or pasteboard foundation. The essential feature was the condition of the surface acted upon by the cutting style.

57 Q. And all three of these machines would be operative with this substitution, would they?

A. The circular composed entirely of the machine strength, to furnish

58 Q. applicative machines forms of and that scribe on scribed a

O

A. At form of applicative

59 Q.

A. The 288, whi

60 Q.

recordin made th that so?

A. It

61 Q.

341,288, of a rec amorph

S

A. It any for



A. The two forms employing tablets in the form of a circular disk would operate just as well with tablets composed entirely of the recording material. In the case of the machine shown in figs. 18 and 19, a strip formed entirely of the recording material would not have sufficient strength, and the paper backing in this case is mainly to furnish this requisite.

58 Q. Then is it your position, that at the time this application was made you had in mind three forms of machines in accomplishing the desired results, and two forms of record bodies for use in connection therewith, and that you considered it necessary to illustrate and describe only one of the latter, while you illustrated and described all three of the former?

Objected to as immaterial.

A. At the time this application was made I had the form of machine in mind, but it was included in another application made about the same time.

59 Q. What other form was this?

A. The form shown and described in patent No. 341,288, which uses a tablet cylindrical in shape.

60 Q. Then, patent 341,288 shows the other form of recording tablet which you had in mind at the time you made the application for the earlier patent, 341,214 is that so?

A. It does.

61 Q. Do you then wish it to be understood that patent 341,288, and not patent 341,214, covers broadly the use of a recording tablet composed entirely of wax or other amorphous material?

Same objection as to question 48.

A. It seems to me that patent 341,214 covers broadly any form of tablet that could be used with the stylus act-



ing to cut, gouge, or engrave a record upon it, while patent 341,288 covers simply the cylindrical form.

62 Q. As I understand your previous answers, at the time these applications were made, you had in mind two forms of recording tablets; one of these consisting of paper coated with wax, and the other a tablet consisting entirely of wax. Am I correct, thus far?

A. You are correct.

63 Q. And the first form of recording tablet was embodied in the application for patent No. 341,214; is that so?

A. Yes.

64 Q. And the second form was embodied, or intended to be embodied, in patent 341,288; is that so?

A. Patent 341,288 is intended to specially cover the recording tablet in cylinder form, and also the special form of mechanism used at that time for forming records by the cutting, gouging, or graving process, and reproducing sounds therefrom.

At this point, by consent of counsel, an adjournment is taken to to-morrow morning, January 23d, 1894, at 10 o'clock, at the same place.

E. L. WHITE,  
*Examiner in Chancery.*

CITY OF WASHINGTON,  
DISTRICT OF COLUMBIA,  
*January 23d, 1894.*

Met pursuant to the adjournment last above noted.  
Present, the same parties as before.  
Whereupon—

Counsel for complainant, in order to shorten the examination of the witness, and in consideration of the

bad state  
the conte  
No. 341,2  
lowing cl  
thirty an  
Exhibit  
Defend  
examinat

65 X-Q  
invention  
341,214, i  
and repr  
and sligh  
A. Ye  
edge of a  
that purp

66 X-Q  
tion that  
sidered t  
therein t

A. I h  
67 X-Q  
recordin  
with wa

A. In  
200,521  
ginning  
page 2)

"be soft

"lar m

"therec

"point

only a  
which

ent, No



bad state of his health, give notice that they will confine the contention of infringement in this case, as to patent No. 341,214, Exhibit Bell and Tainter Patent, to the following claims: One, three, six, seven, nine, seventeen, thirty and thirty-two; and as to patent No. 341,288, Exhibit Tainter Patent, to claims one, four, and seven.

Defendant's counsel states that he will continue the examination in view of the above statement.

65 X-Q. Do you understand that at the time of the invention of the devices shown and described in patent 341,214, it was new to use—in a machine for recording and reproducing sound, a tablet of waxy or amorphous and slightly cohesive substance?

A. Yes, sir; I understand it was. I have no knowledge of anything of that nature having been used for that purpose prior to that time.

66 X-Q. Then you have proceeded upon the assumption that such tablet was broadly new when you considered the claim of patent 341,214, and found included therein the defendant's construction?

A. I have.

67 X-Q. Was it new at the time referred to to use a recording tablet of wax, or of another material coated with wax?

A. In the specification of Mr. Edison's patents No. 200,521, of February 19, 1878, occurs the following (beginning at seventh line of first column from bottom of page 2): "The material employed for this purpose may be soft paper saturated or coated with paraffine or similar material, with a sheet of metal foil on the surface thereof, to receive the impression from the indenting point." So far as my knowledge extends, this is the only allusion to anything in the nature of a wax tablet which had been published prior to the date of this patent, No. 341,214, and the evident intention of Mr. Edi-



son was not to use the wax as the recording material, but simply as a soft backing for the metal foil, in which the record was made.

68 X-Q. In this patent, however, the record was made in this soft substance as well as in the tin-foil, was it not?

A. I presume that the embossing of the metal foil would push it to a certain extent into the wax coating. I think it is extremely doubtful if a record of any value could be made in that way. The indenting style would, I should think, have a strong tendency to tear the metal foil when it is backed by a material such as wax. I doubt very much whether a process of this nature could be successful.

69 X-Q. Is that portion of the last answer following the first sentence thereof based upon personal knowledge derived from experiment or otherwise, or is it merely your opinion?

A. I have made no direct experiments in recording upon tablets formed in the manner described in Mr. Edison's specification, but I have made a great many experiments with tin-foil arranged in various ways, and from my knowledge of the materials, and the action of speech-recording apparatus, I have formed the above opinion.

70 X-Q. In your opinion, does patent No. 341,214 cover a tablet of paraffine?

A. Do you mean paraffine as the recording material?

Counsel for complainants desires it to be understood that he objects to all questions seeking the witness' opinion as to the construction of the patents.

Defendant's counsel repeats the statement made by him in reply to complainant's objection to question 48.

71 X-Q. Yes.

A. I think it d  
72 X-Q. Then,  
the equivalent o  
slightly cohesive

A. I think it a

73 X-Q. What  
material to be use

A. In recording  
one essential feat  
can be easily pus  
sary to form the s  
cutting, gouging,  
have a material w  
too much strain  
also necessary th  
cutting style will  
leave a smooth s  
is too hard is lia  
away under the  
the surface in a  
it is too soft, it  
obliterated und

74 X-Q. Wh  
claimed in pat

A. Any solid  
gouged, or gra

75 X-Q. Do  
ture of wax a

A. Yes, sir

76 X-Q. Th  
composed of  
substantial e  
scribed and

A. I thin

77 X-Q.  
question, to  
mixture of



A. I think it does.

72 X-Q. Then, in your opinion, a paraffine tablet is the equivalent of one of a waxy or amorphous and slightly cohesive material?

A. I think it answers that description.

73 X-Q. What are the essential qualities of a recording material to be used in recording and reproducing sounds?

A. In recording by the indenting or embossing method one essential feature would be great pliability, so that it can be easily pushed or crowded into the shapes necessary to form the sound vibrations. In recording by the cutting, gouging, or graving method, it is essential to have a material which can be easily cut without bringing too much strain upon the recording apparatus. It is also necessary that it should be of such a nature that the cutting style will remove the chip or shaving so as to leave a smooth surface in the groove. A material that is too hard is liable to chip, or, in other words, to break away under the point of the cutting style, and thus leave the surface in a rough condition. On the other hand, if it is too soft, it would be rapidly worn and the vibrations obliterated under the action of the reproducer.

74 X-Q. What do you find to be the recording material claimed in patent No. 341,214?

A. Any solid substance in which the record can be cut, gouged, or graved by the action of a recording stylus.

75 X-Q. Does this include wax, or paraffine, or a mixture of wax and paraffine?

A. Yes, sir; I should think it does.

76 X-Q. Then, in your opinion, a recording tablet composed of any of these three materials would be a substantial equivalent for the tablet which you have described and claimed?

A. I think it would.

77 X-Q. Was it new, at the time of the invention in question, to use a tablet of wax, or of paraffine, or of a mixture of wax and paraffine?



A. So far as my knowledge extends, it was new.

78 X-Q. Then you have assumed this in considering the claims of patent 341,214, and in finding the defendant's construction covered thereby?

A. I have.

79 X-Q. Did you use, in connection with the machines described in the patent now under consideration, a recording material upon a foundation of paper or pasteboard?

A. I did.

80 X-Q. Why did you discontinue such use?

A. I am not aware that we have discontinued the use of it.

81 X-Q. Is it then a fact that the complainants are putting upon the market recording tablets consisting of a recording material upon a foundation of paper or pasteboard?

A. Do you mean at the present time?

82 X-Q. Yes.

A. It is my belief that they are putting out such tablets at the present time.

83 X-Q. Are they putting on the market any other form of recording tablet; and if yes, please describe the same?

A. I think that they are putting out another form of tablet in which the paper or pasteboard backing is not used. But as I have limited knowledge of what the complainants are doing in this direction, I do not speak positively.

84 X-Q. Then you have no personal knowledge as to whether or not they are putting upon the market at the present time recording tablets consisting of a recording material upon paper or pasteboard?

A. I have been informed by an officer of the company that such tablets are being put out. I do not know of any that have been sold by the complainants, and my information consists entirely of that given above.

85 X-Q.

first man

A. The

was first

or pastel

possessio

portatio

one mac

advanta

greatly

coating

case of

terial it

give it t

having

tained b

cheaper

cheaper

backing

to bette

86 X-Q.

able ex

after th

to cool

A. T

87 X-Q.

cast, or

pastebo

A. T

88 X-Q.

such ta

A. T

made,

time.

presen

89 X-Q.



85 X-Q. Which of the two forms of recording tablets was first manufactured to be placed upon the market?

A. The form having the paper or pasteboard backing was first put out. The main objects in using the paper or pasteboard backing were to obtain a recording tablet possessing greater strength to resist handling and transportation through the mails than would be possessed by one made entirely of the recording material. Another advantage of the paper or pasteboard backing is that it greatly cheapens the tablet, from the fact that only a thin coating of the recording material is used, while in the case of a tablet composed entirely of the recording material it is necessary to make it much thicker in order to give it the requisite strength. In the case of the tablet having the paper or pasteboard backing, strength is obtained by the use of said backing, and this being a much cheaper substance than the recording material, a much cheaper tablet is obtained. The paper or pasteboard backing has the further advantage in enabling the tablet to better retain its shape.

86 X-Q. Is it your understanding that there is considerable expansion or contraction in this recording material after the same has been cast, and while it is being allowed to cool and harden?

A. There would be considerable contraction.

87 X-Q. In constructing these tablets the material is cast, or otherwise deposited, while hot, upon the paper or pasteboard foundation, is it not?

A. Tablets have been made in that way.

88 X-Q. Is not that the customary manner of making such tablets?

A. That has been the way in which tablets have been made, but I think another process is in use at the present time. I do not know just how they are constructed at present.

89 X-Q. How far does the present method go?



A. I can not say. I first heard of it several months ago.

90 X-Q. But up to the time this new method was first used, is it not true that the recording material, while hot and in a plastic condition, was cast or otherwise formed upon the paper or pasteboard foundation?

A. I think it is true.

91 X-Q. What was found to be the contraction of the recording material relatively to the paper or pasteboard foundation?

A. I have no knowledge of this having been determined. It is much greater than that of paper apparently.

92 X-Q. Is it not a fact that the manufacture of tablets consisting of paper or pasteboard coated with recording material, was suspended at the time the complainants put upon the market the tablet consisting entirely of recording material?

A. I am not informed upon that subject.

93 X-Q. Which of the two forms of recording tablets as to which you have testified is the more desirable and efficient, in your opinion?

A. In my opinion that containing the paper or pasteboard backing is superior, for the reason that it possesses more strength and is somewhat cheaper to manufacture.

94 X-Q. I now call your attention to sheet 1 of the patent 341,214, and to the description in the specification referring thereto, and ask you whether a sound-recording and reproducing device, such as is there illustrated and described more particularly in figs. 1, 2, and 3, has ever been placed upon the market?

A. I have no knowledge of any machines like those mentioned above having been put on the market.

95 X-Q. Your knowledge in this respect extends to and includes the operations both of yourself and your assignees, the complainants in the present action, does it not?



A. It does.

96 X-Q. I now ask you the same question with relation to the device shown and described in figs. 12 to 17, and the portion of the specification relating thereto?

A. I have no knowledge of any such machines being put out, but some of the individual features of these machines may have been used in those that were put upon the market.

97 X-Q. I now ask you the same question with relation to the device shown and described in figs. 18, 19, and 20, of the drawing, and the portions of the specification relating thereto?

A. The device shown in figs. 18, 19, and 20 was constructed and used experimentally, but none were placed upon the market, so far as my knowledge extends.

98 X-Q. Did any of the three machines illustrated and described in these drawings and specifications ever go into use other than experimental?

A. They did not, although, as I have stated before, important features embodied in these machines were used in later constructions that were put out.

99 X-Q. Please specify these features briefly, omitting their functions?

A. The following features were embodied in later machines that were put upon the market: 1st. A cutting style, capable of being vibrated by and in unison with the sound waves. 2d. Engraving or cutting records in an amorphous or slightly cohesive substance. 3d. Recording material having a wax or waxy surface on a paper or pasteboard foundation. 4th. Cutting or engraving records in the form of a groove with sloping walls, sound waves being represented by elevations and depressions at the bottom of the groove or otherwise. 5th. Loose mounting of the reproducer style to enable it to be readily guided by the record. 6th. The use of gravity to produce a uniform pressure of cutting and re-



producing styles on record. 7th. A hinged tube or hollow standard on which the recorder is mounted and through which the sound waves are conveyed to the same through the hinge. 8th. A similar arrangement of hinged hollow standard for reproducing instrument. All of the above features have, I believe, been embodied in machines put out or placed upon the market by the complainants. Of course, in the natural development of machines of this nature, the form of mechanism is varied as different improvements arise, and in the machines put out the mechanism was not always the same as that in the patent.

100 X-Q. Why was it that the machines shown and described in the patent 341,214, were incapable of practical commercial use?

A. I don't know that they are incapable of practical use. Before the owners of the patent were ready to place machines upon the market, new, and what they considered improved forms of apparatus had been devised, and it was thought best to put them out instead.

101 X-Q. Do you wish it to be understood that in your opinion as an expert in mechanisms relating to recording and reproducing sound, machines constructed similar to those described and shown in this patent would be capable of practical commercial use?

A. I think that they would be capable of a limited practical use, but not to the extent of the improved machines of the present day.

102 X-Q. What do you mean by a limited use?

A. I mean by this that machines would be capable of being used in some of the fields occupied by the machines of the present day. For instance, music could be recorded upon such machines and reproduced for amusement or otherwise. Such machines could also be used for the purpose of instruction in various ways. I have no doubt that there are other uses to which they could be put, but I do not think of any more at present.



103 X-Q. What improvements, devised since the date of this patent and employed in the machines placed upon the market by the complainants, did you have in mind in answering cross-question 100?

A. The improvements consist largely in the form of the machines and in the details of the mechanism. These improvements have made the machines more effective, more easily and readily operated, and have tended to make them generally more desirable in commercial and other uses.

104 X-Q. The rotating wax-coated disk and the mechanism for moving the same relatively to the style shown and described in patent 341,214, and the friction pulley and crank-wheel have been superseded, have they not?

A. They are not being used by the complainants at the present time. The cylindrical form was considered preferable for the recording tablet, and this, of course, necessitated different mechanism for rotating it.

105 X-Q. The machine in which the traveling wax-coated strip was used has also been superseded, has it not?

A. It has.

106 X-Q. Was this form of the device capable of successful commercial use?

A. I should say it was; a limited use.

107 X-Q. But neither it nor the other devices in their entirety, shown in this patent, were ever so used, were they?

A. They were not, to my knowledge.

108 X-Q. You have heretofore referred to two functions of a recording style—one a scraping action, and the other a cutting, gouging, or graving action. What is the essential difference between these actions?

A. In the cutting, gouging, and graving action the material is removed in the form of a chip, or shaving, in a similar manner to that of the cutting tool of a lathe or



planer; while in the scraping action there need not necessarily be the removal of any material. I should consider the action of the recording style of the Scott phonautograph as of a scraping nature. It is a difficult matter to determine just where cutting would end and scraping commence. In mechanical operations, when a cutting tool gets very dull, it is looked upon rather as scraping than cutting. I can conceive of a scraping action without the removal of material.

109 X-Q Then, in order to come within the scope of patent 341,214 the material must be removed in the form of a chip or shaving; is that so?

A. I should say that such would be the case.

110 X-Q. What is the difference in records produced by two styles, one of which has a cutting action and the other of which has a scraping action?

A. I don't know that there would be any difference.

111 X-Q. The record grooves would be equally sharply defined and clean, would they?

A. I don't know that such would be the case, as I never saw a record made in a solid material by means of what would be considered a purely scraping action.

112 X-Q. If a record cylinder were rotated in connection with a chisel-pointed style, operating in a plane at right angles to the longitude of the cylinder, would this be a cutting or a scraping action?

A. I should consider that a cutting action, as in case of turning or planing tools such an action is generally looked upon as that of cutting. The angle of the advancing edge of a cutting tool in mechanical operations is governed largely by the character of the material to be cut. If it is of a somewhat brittle nature, like cast-iron, or some compositions of brass, the tools work more advantageously when the advancing surface is at a right angle, or nearly so, to the surface to be cut. In the case of such materials as wood, lead, wrought-iron and tough



varieties of steel, the cutting is best performed by a tool whose advancing edge makes a greater angle than a right angle with the surface to be cut; in other words, the angle of the tool should be keener than in case of the brittle materials first mentioned. The same principles apply to cutting styles for sound recorders. If the recording material is more or less tough in its nature, the keener cutting style will operate to better advantage than would be the case if the material is more easily divided. Cutting action is essentially that of the action of a wedge, and as a rule the tougher the material the shorter should be the wedge. In machines for recording sound, there are limits to the angles which can be used, for if the angle is made too small there is a constant tendency to gouge into the surface deeper and deeper. In other words, the cutting style is drawn into the material.

113 X-Q. Then, in your opinion, it is wholly immaterial, so far as its *cutting* operation is concerned, whether the end of the style, which engages with the recording cylinder or tablet, is pointed or not?

A. It is not wholly immaterial whether the cutting edge is sharp or not, as I have found recorders to operate much better when the edge or point is sharp.

114 X-Q. I see you have misunderstood my question. What I wish to know is, so far as it affects the cutting operation, is it, or is it not, immaterial whether the end of the style, which engages with the record tablet or cylinder, is chisel-shaped or pointed?

A. The chisel-shaped style would, I should say, be more effective than the pointed one, for the reason that a round point is not well adapted to cutting operations.

115 X-Q. Then, in order that a style should cut, and not scrape, it is not essential that its engaging end taper more or less directly toward the extreme point?

A. As I have previously stated, the angle of the edge



of the style engaging the surface of the recording material should be varied within limits to suit the character of the material in which the record is being formed.

116 X-Q. If the style, shown and described in patent 341,214, had a straight engaging edge extending at right angles to the body of the style, and were not pointed as you have illustrated it, would its action, then, be a cutting or a scraping action?

A. I should say that the action would be principally that of scraping, as I do not think it would be possible to do much cutting with a style of that form.

117 X-Q. Would it alter your opinion if the squared edge of the style were sharp, as in a chisel?

A. It would, decidedly; for in the case of the style with the blunt end, it would be hardly possible for the sound waves to force the style into the recording material, whereas, in the case of the chisel edge, it would readily do so.

118 X-Q. And the chisel-edged style would *cut* the record in the material in the same sense as you have used this word in said patent; is that so?

A. It would.

119 X-Q. Do you understand it to be an essential feature of the style of your invention that its end be pointed or taper from the sides to the extreme end?

A. I do not.

120 X-Q. What, then, was the reason for so pointing the end of the style?

A. One reason for pointing the sides of the style was to obtain a groove with sloping sides. Another reason was that the action of a chisel-shaped style with parallel sides is not as efficient a form of a cutter as the other. In the case of the chisel-shaped style with parallel sides, the chip or shaving is not so readily removed as in the case of the other form, and the sides of the groove are apt to be rough.

At  
ings  
24, 18

Me  
Pr  
W  
conti  
12  
pate  
duci  
the

A  
the  
trat  
the  
as i  
gro  
to  
Th  
bri  
rea  
for  
ex  
be  
fa  
fo



At this point, by consent of counsel, further proceedings herein are adjourned to to-morrow morning, January 24, 1894, at ten o'clock, at the same place.

E. L. WHITE.  
*Examiner in Chancery.*

CITY OF WASHINGTON, D. C.,  
*January 24, 1894.*

Met pursuant to adjournment of yesterday.

Present, the same parties as before.

Whereupon, the cross-examination of the witness is continued, as follows :

121 X-Q. Is a style, such as is shown and described in patent 341,214, used upon sound recording and reproducing machines now being placed upon the market by the complainants?

Objected to as immaterial.

A. The style in use at present, I believe, is not exactly the same as that shown in said patent. The form illustrated in the patent is not well adapted to be used with the recording composition which is at present employed, as it would leave a rough and jagged surface in the record groove. The style shown in the patent is better adapted to use with a composition of beeswax and paraffine. The composition in use at present is harder and more brittle than a mixture of wax and paraffine, and for the reasons explained in answer to cross-question 112, such a form of style is not suitable. I do not know what the exact shape of the style is which is in use at present.

122 X-Q. In your opinion, does the essential distinction between a cutting style and a scraping style lie in the fact that the cutting style removes the material in the form of a chip of shaving?

A. I do not make any such distinction, as I have



stated in my answer to cross-question 108 that it is impossible to tell where cutting ends and scraping commences. In a great many so-called scraping operations there is more or less removal of material, while in others there does not seem to be any such removal. It therefore seems to me that the line between cutting and scraping is a very hazy one.

123 X-Q. Then it is not necessary to remove from the recording tablet a portion of the material in the form of a chip or shaving to demonstrate that the action of the style is a cutting action?

A. I think in the case of cutting, as applied to sound recorders, there should be a removal of material.

124 X-Q. Do I understand your position to be that it is necessary for the style of the sound recorder to remove a portion of the material in the form of a chip or shaving in order that it may come within the definition of a cutting style?

A. In patent 341,214, page 6, line 70, the term "cutting" is defined as "an action in which the material is removed "in chips, shavings, or other small pieces—as in engraving, "turning and the like—and not simply displaced." That would be my definition as applied to an operation of this nature.

125 X-Q. That being the case, a style which did not operate to remove the material in the form of chips, shavings, or other small pieces, would not be a cutting style, according to your construction of the term?

A. I should say that it would not.

126 X-Q. In your answer to the 7th question, what did you mean by the use of the term, "recognizable speech could not be obtained?"

A. I meant that when records of speech were made upon such an instrument people rarely understood the reproduction given by the instrument unless they were familiar with what had been recorded.



127 X-Q. In answering that question, and the last question, have you testified upon personal knowledge of the results obtained from the use of the device referred to?

A. Yes, sir; upon personal knowledge, gained from a great many experiments.

128 X-Q. By whom was the machine with which these experiments were made constructed?

A. I do not know who manufactured the machine that I used, but I understood that it was one of a lot made either for or by the Edison Speaking Phonograph Company. Several years after making the experiments referred to above, I was shown a similar instrument to the one I used, only somewhat larger in size, by Mr. E. H. Johnson, in the factory of Bergmann & Co., New York City, and the results we obtained with this instrument were little if any better than those that I had obtained. I understood Mr. Johnson to say at the time, which was, I believe, in August, 1885, that that instrument represented the best results that had been obtained up to that time.

All that part of the answer following the word "machine," the first sentence thereof, is objected to by counsel for defendant as not responsive to the question, and volunteered, and the last sentence of the answer is further objected to as hearsay.

Complainants' counsel submits that the question required the witness to give his reasons for statements he had made, and that the answer is fully responsive.

129 X-Q. You are unable to assert, upon your own knowledge, that the machines as to which you have testified in the foregoing answer were made by the Edison Speaking Phonograph Company?

A. I am unable to so testify.



130 X-Q. In fact, you have no personal knowledge as to by whom the machines were made?

A. I have no personal knowledge, but have an impression that the stamp of the company was upon the machine. Of this, however, I am in doubt. The machine belonged to Prof. A. Graham Bell, and was, I believe, obtained by him through the agency of Mr. Gardiner G. Hubbard, who was at that time President of the Edison Speaking Phonograph Company.

Same objection by defendant's counsel as to cross-question 128.

131 X-Q. And you were unable to obtain from these machines a reproduction of speech recorded upon the cylinder?

A. We were able to obtain reproductions of speech, but, as I have stated before, the reproduction was so indistinct that it was rarely the case that a person unacquainted with what was recorded could understand what the machine said.

132 X-Q. You say, inferentially, that sometimes recognizable speech could be obtained, and sometimes it could not; how do you account for this?

A. Some voices record very much better and clearer than others, even on the improved instruments in use at the present time; and some words, especially those containing open vowel sounds, record and reproduce very much better and easier than others in which the hissing sounds are most prominent.

133 X-Q. Was it old, at the time of the invention of the devices shown in patent 341,214, to use a method of forming a record of sounds by impressing sonorous vibrations upon a style, and thereby forming, by an action other than a cutting action, in a solid body, the record corresponding in form to the sound waves?

A. It was old at that time.

134  
of the  
is it?  
A. T  
solid be  
someth  
135  
sounds  
A. I  
136  
use a v  
A. I  
137  
recorde  
ence to  
A. I  
138  
provid  
corresp  
A. T  
sound  
to this  
form, s  
be com  
of the  
139  
sound  
the sa  
A. I  
ning a  
Mr. Ed  
metho  
metal  
with p  
to rece  
record



134 X-Q. Then the sole novel feature in the first claim of the patent 341,214 is the cutting action of the style, is it?

A. The language used in the claim is "cutting in a solid body;" an operation of cutting seems to imply that something is to be cut.

135 X-Q. Was a solid body for receiving a record of sounds first disclosed in this patent?

A. I do not think it was.

136 X-Q. Was it old at the time of your invention to use a vibratory style in a sound recorder?

A. It was old.

137 X-Q. Was it old to use, in connection with a sound recorder, mechanism for moving the tablet with reference to the style?

A. It was old.

138 X-Q. Was it old to use a tablet having its surface provided with narrow lines of irregular, or varied form, corresponding to sound waves?

A. Tablets having records more or less similar to the sound waves produced on them had been in use prior to this invention. They had lines of varied or irregular form, similar to sound waves, and while the lines might be considered equivalent to narrow ones, the instruments of the present time make them very much narrower.

139 X-Q. Was it old to use a method of forming a sound or speech record which consisted in constructing the same in wax or wax-like composition?

A. It was not old, unless the method described, beginning at 7th line from bottom, 1st column, 2d page, of Mr. Edison's patent, No. 200,521, could be called such a method. This method involved the use of a sheet of metal foil placed upon soft paper saturated or coated with paraffine or similar material, and the metal foil was to receive the impression of the indenting point. If a record could be formed in this manner the pushing of



the foil into the paraffine would undoubtedly form something resembling sound vibrations in the paraffine itself.

140 X-Q. Was it old to form a groove in solid material?

A. It was.

141 X-Q. Was it old to hold a sound recorder having a vibratory style against the recording material by yielding pressure?

A. I have no knowledge of sound recorders being so held prior to this invention.

142 X-Q. What do you understand to be the meaning of "yielding pressure," as used in claim 30?

A. I understand the meaning to be the pressure produced by the action of a spring or an equivalent device, or the action produced by gravity.

143 X-Q. Do you find in patent 341,214 any mention of a spring for holding the recording style against the material by yielding pressure; or is it your understanding that a spring-actuated recorder-carrying arm is the equivalent of such an arm actuated by gravity?

A. In reference to the first part of that question, I find on page 2 of the specification of the patent, commencing with line 38, the following: "The invention consists, 'eighthly, in a sound-recorder having a cutting or graving style which is held by elastic or yielding pressure against the surface on which the record is to be made.'" I should say that the spring-actuated recorder-carrying arm would be the equivalent of an arm actuated by gravity, but we have found the gravity device to be superior in this connection to a spring, for the reason that gravity acts with greater uniformity, and therefore the depth of cut can be more accurately maintained by this means.

144 X-Q. Was it not old at the time of this invention, to use a recording instrument mounted on a hinged arm?

A. Such devices had been made before, I believe.

145 X-Q. Would a phonograph in which a record was



indented in wax, or a wax-like composition, be included within the scope of this patent?

A. If such a record could be made by simply displacing the material without removal thereof, I should think that it would not fall within the scope of this patent.

146 X-Q. What is the composition now being used upon recording tablets or cylinders manufactured by the complainant?

Objected to as immaterial.

A. I do not know.

147 X-Q. Why was the old process of manufacturing these tablets or cylinders discontinued, and the new process, which you have heretofore mentioned, employed?

Same objection.

A. I do not know.

148 X-Q. Is the present tablet better in your opinion than that made under the old process?

Objected to as immaterial, and evidently an unfair attempt to elicit information for the purpose of other suits, and the witness is instructed not to answer the question.

A. I refuse to answer the question.

149 X-Q. You have heretofore testified that prior to the date of this patent 341,214 you used cylinders composed entirely of the recording material. Were these placed upon the market, and were they satisfactory?

A. They were not placed upon the market, to my knowledge, and they were satisfactory so far as the recording and reproduction were concerned, but as the paper or pasteboard backing was considered an improvement that form was used in preference.

150 X-Q. Was it new with you to use a cylindrical tab-



let provided with a coating of wax or wax-like material?

A. I have no knowledge of any similar arrangement being used prior to this invention.

151 X-Q. Was it new to use a cylinder having a recording material upon its periphery?

A. It was not new, as the Scott phonautograph and the phonograph using the metal foil had recording material arranged as stated.

152 X-Q. Were these cylinders hollow and tubular?

A. They were.

153 X-Q. Have you heretofore assumed that it was new at the time of your invention to use a recording material of wax or wax-like substance?

A. It is my belief that it was new.

154 X-Q. What do you understand to be a self-sustaining tablet?

A. A self-sustaining tablet, I should say, is one that will retain its shape readily when removed from the tablet-holder of the machine under ordinary changes of temperature, handling, etc.

155 X-Q. Have you assumed that such a self-supporting tablet was new at the time of your invention?

A. I have.

156 X-Q. In other words, it is your opinion that prior to the date of your application it was new to use in connection with a machine for recording sound, a tablet that would retain its shape readily when removed from the tablet-holder under ordinary change of temperature?

A. Under changes of temperature, simply, I presume the metal foil would be considered a permanent form of tablet; whereas it would not be so considered if the element of handling is taken into consideration. The same would also apply to the lampblack film used as a recording material in the phonautograph.

157 X-Q. What do you mean by a "permanent form of tablet;" a self-sustaining tablet?



A. In using the term "permanent," in connection with metal foil, in the previous answer, I meant that such a tablet would not be materially affected so far as losing its shape was concerned, or otherwise, by such ordinary changes of temperature.

158 X-Q. Then, so far as losing its shape by ordinary changes of temperature is concerned, the metal foil tablet was a self-sustaining tablet, was it?

A. It was, in so far as the temperature alone was concerned.

159 X-Q. Of what does the tablet shown in the drawings of patent 341,288, and described in the specification thereof, consist?

A. It consisted of a hollow cylinder, or tube of paper, coated with a wax or wax-like composition.

160 X-Q. This, then, is the sense in which the word tablet is used in this patent?

A. I do not think that it is limited entirely to this specific form, and in support of this refer to page 9, lines 57 to 99, of the specification of said patent, wherein it is stated that terms, "such as tablet, tablet-holder, carrier, sound-conveyer, gearing, etc., refer to devices of any ordinary "or suitable description, except as otherwise indicated."

161 X-Q. You find, however, do you not, that the tablet is "otherwise indicated" in the statement of the invention in the first column of page 1 of said patent, and about midway of the first column of page 5, at both of which places it distinctly states that said tablet consists of an elongated hollow cylinder or tube coated with a layer of wax and paraffine?

A. I find the descriptions of the tablet which you refer to, but I also note, in the portion of the specification referred to in my last answer, the following:

"In the foregoing description of the machine shown "in the drawings, dimensions, proportions, materials and "other details of construction are mentioned with par-



"ticulars for the purpose of enabling others more readily  
"to make and use the new improvements, and not as  
"limitations of the said improvements, since it is obvious  
"that the modification can be made in details without  
"departing from the spirit of the invention, and that parts  
"of the invention can be used separately."

You will see by this that it was not the intention to limit the different devices to the various forms described, as it is there stated that it is obvious that modifications can be made in detail without departing from the spirit of the invention.

162 X-Q. In referring to the phonautograph heretofore, what have you regarded as the tablet?

A. It is my impression that the film of lampblack was placed directly upon the cylinder or tablet-holder.

163 X-Q. This tablet-holder was a hollow, metallic, or other hard cylinder, was it not?

A. I believe it was.

164 X-Q. And this metallic or other hard cylinder was coated with the composition for receiving the record, was it not?

A. It was.

165 X-Q. The office of this tablet-holder was to support and rotate the tablet of recording composition, was it not?

A. I presume that it was.

166 X-Q. Have you any doubt on that point?

A. I have no doubt but what the cylinder in the Scott phonautograph was used to support and rotate the lampblack film in which the record was formed.

167 X-Q. Is it your understanding that the tablet-holder of the Scott phonautograph was journaled at its ends, so as to be capable of rotation?

A. I don't think that it was journaled at the ends, for the reason that it was constructed to travel longitudinally in a spiral motion when rotated, and if journaled at the

ends  
ing, 1  
16s  
either  
journ  
porte  
longi  
A.  
throu  
nearl  
screw  
which  
which  
nal m  
man  
of the  
16s  
near  
A.  
be ne  
beari  
the a  
positi  
first  
centr  
the of  
ings  
170  
have  
No. 2  
A.  
171  
tablet  
in ord  
does i  
A.



ends it would have a tendency to drop out of its bearing, I should think.

168 X-Q. Is it not your understanding that at or near either end of the cylindrical tablet-holder there were journal-bearings in which said tablet-holder was supported by means of a spindle or axle passing through the longitudinal centre of the holder?

A. It is my understanding, that the axle passing through the cylinder was used as a journal, throughout nearly, if not quite, its entire length. There was also a screw-thread cut upon the surface of this journal or axle, which, acting upon a nut attached to one of the standards which supported the apparatus, produced the longitudinal motion when the cylinder was rotated in a similar manner to the method adopted in the early constructions of the phonograph.

169 X-Q. Were there not bearings for the axle at or near both ends of the holder?

A. In one position of the cylinder, one bearing would be near one end of the axle or journal, and the other bearing would be some distance from the other end of the axle. When the cylinder is rotated to the opposite position, the reverse would be the effect, and the bearing first mentioned would be then in the vicinity of the centre of the axle, and the second bearing would be at the other end of the axle. In other words, both bearings could not be at the ends at the same time.

170 X-Q. Do you understand the operation which you have just described to be similar to that shown in patent No. 200,521, heretofore referred to?

A. I do.

171 X-Q. The patent 341,288 shows and describes a tablet-holder which is tilted bodily out of its bearing in order that a recording tablet may be slipped thereon, does it not?

A. It does.



172 X-Q. Do you find this construction in the Complainants' Exhibit Modern Phonograph?

A. I do not find that specific construction, but I do find what appears to be an equivalent device.

173 X-Q. Do you find in said Exhibit a tablet-holder detachable from its support, or do you find a support which is detachable from the tablet-holder, said support being capable of being turned entirely away from the tablet-holder, and said tablet-holder maintaining at all times its horizontal position?

A. I find in Complainants' Exhibit Modern Phonograph a support detachable from the end of the tablet-holder axle. I also find in patent 341,288 a support detachable from the end of the axle of the tablet-holder, both being detachable for the same purpose, which is to permit putting on and taking off the recording tablet. While the mechanism in Complainants' Exhibit Modern Phonograph differs from that shown in patent 341,288, the object which it is desired to attain seems to be the same—that is, to enable the record cylinder readily to be put on and taken off.

174 X-Q. In the patent referred to, was it intended that the mere operation of the support 310 would make it possible to place upon the tablet-holder the recording tablet, or is the office of this support merely to release one end of the holder, which is then tilted up bodily?

A. After releasing the support 310, it was necessary to either lift or push to one side the tablet-holder in order to slide the tablet upon it.

175 X-Q. In patent 341,214 you have shown and described no elongated cylindrical tablet-holder, have you?

A. There is none shown.

176 X-Q. And the only elongated cylindrical tablet-holder which you have shown and described in either of said patents is one which is of the same diameter throughout, is it not?



A. The drawings in patent No. 341,288 show the tablet-holder to be of the same diameter throughout that portion on which the tablet rested, but in the actual construction of the machine it was customary to make it very slightly tapered at the end having the ball-bearing, in order to wedge the tablet firmly to prevent it from slipping on the tablet-holder.

177 X-Q. How long since has this latter construction been in use?

A. In machines put out by the complainants, elongated tablet-holders have not been used. The cylinder has been held between two tapering rotating pieces, or chucks, pressed together by the action of a spring.

178 X-Q. Do you mean to say that complainants have put out no machines, to your knowledge, in which a tapering cylindrical tablet was used?

Objected to, as the question of the complainants' structures will be a proper subject of inquiry when the present defendants state their evidence in suits brought by them, one of which involves the construction of the latter holder. If counsel desires Mr. Tainter's evidence on that point he can call him at his own time and at his own expense, but on this examination the witness is instructed not to answer.

Defendant's counsel submits the question to be proper as going to the operativeness of the patented device in view of the part which it expects to prove, that a tablet-holder, such as described in patent 341,288, is objectionable for many reasons, and was superseded by another and different form of holder devised by another.

A. I refuse to answer.

179 X-Q. Are you a director of the American Graphophone Co., one of the complainants herein?



A. Yes, sir; I am.

180 X-Q. Is Edward D. Easton, one of the defendants named in the bill of complaint herein, also a director, or other officer of said company?

A. He is a director.

Redirect-examination by Mr. MAURO:

181 Q. Have you heretofore given evidence in a patent suit?

A. I never have.

182 Q. You are not then what may be called a patent expert?

A. I am glad to say that I am not.

183 Q. In your answer to cross-question 77, you stated that you believed it to be new at the time of your invention to employ a tablet of paraffine. Do you mean by that to be understood as saying that you supposed the use of paraffine in or as part of the recording substance to be new?

A. I knew that the use of a paper strip saturated with paraffine had been prepared.

184 Q. Assuming that a paper strip saturated with paraffine could be successfully employed to receive an embossed or indented record, what, in that case, would be the recording medium, the paper or the paraffine?

A. If the paper strip was simply saturated with the paraffine, I should think the recording medium would be a composition of paper and paraffine.

CHARLES S. TAINTER.

Sworn to and subscribed before me this 24th day of January, A. D. 1894.

E. L. WHITE,  
*Examiner in Chancery.*

Adjourned, subject to notice.

E. L. WHITE,  
*Examiner in Chancery.*



CITY OF WASHINGTON, D. C.,

July 18, 1894.

Met pursuant to notice.

Whereupon Mr. Mauro, of counsel for complainant, hands to the examiner, and makes part of the record in this case, a stipulation which is in the words and figures following, to wit:

IN THE SUPRME COURT OF THE DISTRICT  
OF COLUMBIA.

VOLTA GRAPHOPHONE COMPANY, *et al.*,  
*vs.*  
 COLUMBIA PHONOGRAPH COMPANY.

**Stipulation.**

It is hereby stipulated and agreed by the solicitors for the respective parties hereto that each of said parties shall have the privilege of filing proofs taken in its own behalf herein, in an action now pending between the complainants above named and the Edison phonograph works, on the same patents as those involved herein, in the United States Circuit Court for the district of New Jersey; and conversely, that each of said parties shall have the privilege of filing herein proofs taken in its own behalf in the said action in the district of New Jersey; and that any proofs entitled in one case and filed in the other shall have the same force and effect as if duly and regularly taken in such other case.

It is further stipulated that in proving the title of the complainants in and to the letters patent in suit the complainants may use certified copies of their title papers, such copies to be received in evidence with the same force and effect as if the originals, accompanied by proper proof of execution and delivery, were introduced.

And it is further stipulated that the complainant corporations are corporations legally existing, as stated in the bill of complaint herein.



It is further stipulated and agreed that subsequent to the date of "Complainants' Exhibit License Agreement," and prior to the filing of the bills of complaint herein and in the cause in the district of New Jersey above referred to, the defendant herein used and sold instruments for recording and reproducing sound similar to "Complainants' Exhibit Modern Phonograph," and that such instruments were during the same period manufactured by the Edison Phonograph Works, the defendant in the said New Jersey case.

POLLOK & MAURO,  
*Solicitors for Complainants.*

NEW YORK, July 17, 1894.

H. W. SEELY,  
*Of Counsel for Defendant.*

NEW YORK, July 17, 1894.

And thereupon counsel for the complainants announce that their *prima facie* case is closed.

E. L. WHITE,  
*Examiner in Chancery.*

DISTRICT OF COLUMBIA, ss.

I, E. L. White, an examiner in chancery of the Supreme Court of the District of Columbia, do hereby certify that at the times and place aforesaid, Charles Sumner Tainter, a witness on behalf of the complainants in the above-entitled cause, was by me sworn, before any question was put to him, to tell the truth, the whole truth and nothing but the truth relative to the said cause, and that the answers of said witness were taken down by me, and his deposition as above set forth was read over and signed by him before me, at the time and place aforesaid.

I further certify that I am not of counsel for any of the parties to said cause, nor am I interested in the result thereof.

I further certify that my fees for taking, certifying, and returning the said deposition, amounting to \$75, have been paid to me by the complainants.

In witness whereof I have hereunto set my hand this 18th day of July, A. D. 1894.

E. L. WHITE,  
*Examiner in Chancery.*



Phonograph Company, having been appointed such Receiver in the month of September, 1894.

The question as to whether or not the defense of the above suit shall be carried on further at the expense of the Company of which I am the Receiver, has been submitted to me by the firm of Dyer & Seely, the defendant's solicitors. The affairs of the said North American Company are in a very involved condition, and according to the schedules on file in connection with my appointment as  
 10 Receiver, the liabilities of the said North American Company are far in excess of its assets. In view of this, I am unable to authorize Messrs. Dyer & Seely to continue the defense of this case, for I do not feel at liberty to incur, as Receiver of the North American Company, any further expense in this connection. I have therefore, instructed Messrs. Dyer & Seely not to look to me as Receiver, nor to the North American Phonograph Company for payment of their bills, and have authorized them to withdraw from the above suit, if they see fit.

20 Subscribed and sworn to before me, }  
 this        day of November, 1894. }

EXHIBIT No. 129.

Affidavit of John R. Hardin, as sworn to.  
 Supreme Court of the District of Columbia.

30 THE VOLTA GRAPHOPHONE COMPANY, *et al.*,  
*vs.*  
 COLUMBIA PHONOGRAPH CO.

*In Equity.*  
*Affidavit of John*  
*R. Hardin,*  
*Receiver.*

State of New Jersey, }  
 County of Essex. } ss.

JOHN R. HARDIN, being duly sworn, deposes and says as  
 40 follows:

*Cult ing vs. N. A. Phono Exhibit volume 2*



I am a counsellor-at-law of the State of New Jersey, with my office at number 761 Broad street, Newark, N. J. I am the Receiver of The North American Phonograph Company, having been appointed as such Receiver by the Court of Chancery of New Jersey on the twenty-first day of August, eighteen hundred and ninety-four. I am also the ancillary Receiver of said Company in the State of New York, having been appointed as such ancillary Receiver by the Supreme Court of the State of New York on the twenty-second day of August, eighteen hundred and ninety-four. 10

At the time of my appointment, the above entitled suit was pending, and shortly thereafter my attention was called thereto by Messrs. Dyer & Seely, solicitors of the defendant in the above entitled suit, and I was requested by them to inform them whether the defense of the said suit was to be carried on further at the expense of the North American Company, of which I was Receiver. At the same time I was informed that up to the time of the insolvency of The North American Phonograph Company, 20 the expense of the defense in the above entitled suit had been borne by The North American Phonograph Company. In response to such inquiries, I informed the said firm of Dyer & Seely that the affairs of the North American Company were in a very involved condition, and that its liabilities were far in excess of its assets; that the condition of the Company would not admit that I should incur expense in the defense of the above suit, and that I was unwilling, as Receiver, to authorize any additional expenditure whatsoever therein. I further informed them 30 that they should not look to me, as Receiver, nor to the estate of The North American Phonograph Company, for the payment of bills for services or disbursements incurred in the defense of said suit, and that, so far as I was concerned, they were authorized to withdraw or take such other proceedings as they saw fit. This determination is based on the insufficiency of the assets of The North American Phonograph Company to bear the burden of expensive litigation, and was made without any reference to the parties to the controversy before the Court in the above 40

ated such Re-  
defense of the  
the expense of the  
been submitted  
defendant's solicitor  
American Company  
according to the  
appointment as  
American Com-  
of this, I am  
to continue the  
erty to incur,  
any further  
fore, instructed  
Receiver, nor  
pany for pay-  
to withdraw

sworn to

Columbia.

*In Equity.*

*David of John  
R. Hardin,  
Receiver.*

and says as



entitled suit, with which controversy I have not sufficiently acquainted myself to form an opinion on its merits.

Sworn and subscribed before me, a Notary  
Public in and for said County and State,  
this 9th day of November, 1894.

Witness my hand and official seal.

# EXHIBIT No. 130.

(Receiver's Advertisement of Sale.)

10

NEWARK, N. J., February 15th, 1895.

The undersigned, Receiver of the North American Phonograph Company, an insolvent corporation, hereby solicits bids for the property of the said corporation hereinafter described, such bids to be in writing, addressed to the subscriber as Receiver of the said North American Phonograph Company, and to be delivered to the said Receiver on or before the fifteenth day of March, eighteen hundred and ninety-five.

20

## I.

A large stock of miscellaneous phonograph and graphophone machines, tables, cabinets, parts and appliances, including obsolete and available material, inventoried by the North American Phonograph Company in the year eighteen hundred and ninety-four at upwards of Forty Thousand Dollars (\$40,000).

## II.

30 All the right, title and interest of the North American Phonograph Company of, in and to letters patent of the United States for phonographs, graphophones or appliances, or improvements of either or both, and in any and all licenses granted under any such letters patent to said Company, or to any one else for it.

## III.

40 All the right, title and interest of the North American Phonograph Company in the stock of the various local Companies, whether now on deposit with the Central Trust Company of New York City, or still retained by the local Companies or held in trust for the said North American Phonograph Company.



IN THE SUPREME COURT OF THE  
DISTRICT OF COLUMBIA.

VOLTA GRAPHOPHONE CO. et al )  
vs ) In Equity No.14,533.  
COLUMBIA PHONOGRAPH COMPANY. }

December Term 1894, No.61.

Statement of the Case on behalf of Complainants.

The bill charges infringement of Letters-patent No.341,214 granted to Bell & Tainter, and No.341,288 granted to Sumner Tainter, both dated May 4,1886, and being for Improvements in Recording and Reproducing Sounds. *The bill was dismissed as to E.D. Weston, one of the original defendants.*

The record shows that the North American Phonograph Co., a New York Corporation, intervened by its counsel, Messrs Dyer & Seely, and assumed the defense. An answer was filed setting up various defenses. *The Bill expressly waived answer under oath, hence the allegations of the latter cannot be considered (Sup. Court Rule 41 as amended).*

Complainants took their prima facie proofs in January 1894, and after waiting eight months for some movement on the part of defendants, applied for an order limiting defendant's time, which order was granted by Judge Cox, October 1,1894.

In November defendant's counsel withdrew appearance without having taken any testimony. The cause therefore stands for hearing on complainant's prima facie proofs.

The patents and complainants' title are proved by certified copies under stipulation at the end of the record



(p.51, printed record). It is also admitted by the same stipulation that defendant has used and sold instruments similar to "Complainant's Exhibit Modern Phonograph".

Mr. Tainter, produced as a witness testifies (p.11) that the exhibit Modern Phonograph embodies and employs the subject-matter of claims 1,3,4,5,6,7,8,9,10, 15,16,17,18,24,27,30, 21 and 32 of patent No.341,214 and of claims 1,4,5,6,7 and 37 of No.341,288. On page 24 of the record, with a view to ~~abate~~ shortening an excessively long cross-examination, complainant's counsel gave notice that he would limit his contention of infringement in this case to claims 1,3,6,7,9,17 30 and 32 of the first mentioned patent, and claims 1,4 and 7 of the second patent.

This testimony not being contradicted, complainants are entitled to a decree adjudging that the patents are valid and that defendant has infringed the same and particularly the claims specified above, and to a perpetual injunction and an accounting as prayed in the bill.

Respectfully submitted,

*Anthony Pollock.*  
*Philip Havers.*

of Counsel for Complts.



FILED  
DEC 20 1894

In the Supreme Court of the  
District of Columbia.

*J.R. Young clerk*

-----  
THE VOLTA GRAPHOPHONE COMPANY and )  
AMERICAN GRAPHOPHONE COMPANY, )  
Complainants, )

vs

) IN EQUITY No.14,533.  
)  
)

COLUMBIA PHONOGRAPH COMPANY, and )  
EDWARD D.EASTON. )  
Defendants. )  
-----

--:DECREE:--

This cause came on for hearing upon the Bill, Answer, testimony and exhibits; and the counsel who had appeared for the Defendant Company having been allowed to withdraw their appearance for said Company, and the Bill having been dismissed as to the defendant Easton, the cause was submitted by Complainant's counsel, ex parte, and all the said proceedings were by the Court read and considered.

It is therefore this 20<sup>th</sup> day of December 1894, adjudged, ordered and decreed that the Letters-patent described in the bill of complaint, to wit: Letters-patent No.341,214 issued May 4,1886, to C.A.Bell and Sumner Tainter for "Improvements in Recording and Reproducing Speech and other Sounds", and Letters-patent No.341,288 issued May 4, 1886 to Sumner Tainter for "Improvements in Apparatus for Recording and Reproducing Sounds" are valid; that the complainants have title thereto as alleged in the said bill



of complaint; that the defendant company has infringed said letters-patent and each of them by the use and sale of machines or phonographs and recording cylinders or tablets therefor as illustrated by the apparatus introduced in evidence bearing the inscription "North American Phonograph Company of New York" "No. 5185" and identified as "Complainant's Exhibit Modern Phonograph, E.L. White, Examiner in Chancery", and particularly has infringed claims numbered 1, 3, 6, 7, 9, 17, 30 and 32 of the first mentioned patent No. 341, 214 and claims numbered 1, 4 and 7 of the second patent No. 341, 288 to which claims complainant's have limited the contention of infringement herein.

ordered

And it is further adjudged, and decreed that a writ of injunction issue against the defendant, the said Columbia Phonograph Company, perpetually enjoining and restraining it, its officers, agents, attorneys, employes, servants and workmen, from making, using or vending the inventions described and claimed in said Letters-patent, or either of them, and particularly from making, using or selling phonographs, or recording cylinders, substantially like the apparatus exhibited in evidence as aforesaid.

And it is further adjudged, ordered and decreed that the cause be referred to the Auditor of the Court to determine the amount of damages and profits which the complainants are entitled to recover of the defendant company; and that the complainants recover of the defendant company the costs of this suit.

*A. B. Hager*  
*C. W. H. H. H.*